

ROYAL BANK OF CANADA  
Form 424B2  
August 25, 2017

RBC Capital Markets® Filed Pursuant to Rule 424(b)(2)  
Registration Statement No. 333-208507

## Pricing Supplement

Dated August 23, 2017  
To the Product \$2,300,000  
Prospectus Supplement Auto-Callable Barrier Notes  
ERN-ETF-1 Dated Linked to the SPDR® S&P® Biotech ETF,  
January 11, 2016, Due August 27, 2020  
Prospectus Supplement Royal Bank of Canada  
Dated January 8, 2016,  
and Prospectus Dated  
January 8, 2016

Royal Bank of Canada is offering the Auto-Callable Barrier Notes (the “Notes”) linked to the performance of the SPDR® S&P® Biotech ETF (the “Reference Asset”).

The CUSIP number for the Notes is 78012K5D5. The Notes do not pay interest.

The Notes will be automatically called at the applicable Call Amount if the closing price of the Reference Asset is greater than or equal to its Initial Level on any quarterly Observation Date on or after February 23, 2018. The Call Amounts are based on a rate of return of 9.60% per annum, and will increase on each quarterly Observation Date to reflect that rate of return. If the Notes are not called, you will lose all or a substantial portion of your principal amount if the Final Level is less than 70% of the Initial Level. Any payments on the Notes are subject to our credit risk.

Issue Date: August 28, 2017

Maturity Date: August 27, 2020

The Notes will not be listed on any securities exchange.

Investing in the Notes involves a number of risks. See “Risk Factors” beginning on page S-1 of the prospectus supplement dated January 8, 2016, “Additional Risk Factors Specific to the Notes” beginning on page PS-6 of the product prospectus supplement dated January 11, 2016, and “Selected Risk Considerations” on page P-8 of this pricing supplement.

The Notes will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation or any other Canadian or U.S. government agency or instrumentality.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Notes or determined that this pricing supplement is truthful or complete. Any representation to the contrary is a criminal offense.

	Per Note	Total
Price to public <sup>(1)</sup>	100.00%	\$2,300,000.00
Underwriting discounts and commissions <sup>(1)</sup>	3.00%	\$69,000.00
Proceeds to Royal Bank of Canada	97.00%	\$2,231,000.00

<sup>(1)</sup>Certain dealers who purchased the Notes for sale to certain fee-based advisory accounts may have foregone some or all of their underwriting discount or selling concessions. The public offering price for investors purchasing the Notes in these accounts was between \$970.00 and \$1,000 per \$1,000 in principal amount.

The initial estimated value of the Notes as of the date of this pricing supplement is \$959.04 per \$1,000 in principal amount, which is less than the price to public. The actual value of the Notes at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. We describe our determination of the initial

estimated value in more detail below.

RBC Capital Markets, LLC, which we refer to as RBCCM, acting as agent for Royal Bank of Canada, received a commission of \$30.00 per \$1,000 in principal amount of the Notes and used a portion of that commission to allow selling concessions to other dealers of up to \$30.00 per \$1,000 in principal amount of the Notes. The other dealers may forgo, in their sole discretion, some or all of their selling concessions. See “Supplemental Plan of Distribution (Conflicts of Interest)” on page P-16 below.

RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes  
 Linked to the SPDR® S&P® Biotech ETF,  
 Due August 27, 2020

**SUMMARY**

The information in this “Summary” section is qualified by the more detailed information set forth in this pricing supplement, the product prospectus supplement, the prospectus supplement, and the prospectus.

Issuer: Royal Bank of Canada (“Royal Bank”)  
 Issue: Senior Global Medium-Term Notes, Series G  
 Underwriter: RBC Capital Markets, LLC (“RBCCM”)  
 Reference Asset: SPDR® S&P® Biotech ETF  
 Bloomberg Ticker: XBI  
 Currency: U.S. Dollars  
 Minimum Investment: \$1,000 and minimum denominations of \$1,000 in excess thereof  
 Pricing Date: August 23, 2017  
 Issue Date: August 28, 2017  
 CUSIP: 78012K5D5  
 Valuation Date: August 24, 2020

Call Feature: If, starting on February 23, 2018 or any Observation Date thereafter, the closing share price of the Reference Asset is greater than or equal to the Initial Level, then the Notes will be automatically called and the applicable Call Amount will be paid on the corresponding Call Settlement Date.

	Observation Date	Call Settlement Date	Call Amount (per \$1,000 in principal amount)
Observation Dates/Call Settlement Dates/Call Amounts:	February 23, 2018	February 27, 2018	\$1,048
	May 23, 2018	May 25, 2018	\$1,072
	August 23, 2018	August 27, 2018	\$1,096
	November 23, 2018	November 28, 2018	\$1,120
	February 25, 2019	February 27, 2019	\$1,144
	May 23, 2019	May 28, 2019	\$1,168
	August 23, 2019	August 27, 2019	\$1,192
	November 25, 2019	November 27, 2019	\$1,216
	February 24, 2020	February 27, 2020	\$1,240
	May 26, 2020	May 28, 2020	\$1,264
	August 24, 2020 (the “Valuation Date”)	August 27, 2020 (the “Maturity Date”)	\$1,288

The Call Amounts correspond to a return of 9.60% per annum on the Notes, if they are called. Accordingly, you will not receive any return on the Notes that exceeds the applicable amount set forth above, even if the price of the Reference Asset increases substantially.

The Observation Dates are subject to postponement as set forth in “General Terms of the Notes—Market Disruption Events” in the product supplement if such a day is not a trading day or if a market disruption event occurs on that day. If any Observation Date is so postponed, the related Call Settlement Date will be postponed by the same number of business days.

Initial Level: \$76.97, which was the closing share price of the Reference Asset on the Pricing Date.

Final Level: The closing share price of the Reference Asset on the Valuation Date.

P-2 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes

Linked to the SPDR® S&P® Biotech ETF,

Due August 27, 2020

Barrier Level: \$53.88, which is 70.00% of the Initial Level (rounded to two decimal places).

Percentage Change:  $\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$

Initial Level

If the Notes are not called on any Observation Date (including the Valuation Date), we will pay you at maturity an amount based on the Final Level of the Reference Asset:

- If the Final Level is greater than or equal to the Barrier Level, we will pay you a cash payment equal to the principal amount.

Payment at Maturity:

- If the Final Level is below the Barrier Level, you will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to:

$\$1,000 + (\$1,000 \times \text{Percentage Change})$

The amount of cash that you receive will be less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the Reference Asset from the Pricing Date to the Valuation Date. Investors in the Notes could lose some or all of their investment if there has been a decline in the price of the Reference Asset below the Barrier Level.

Maturity Date:

August 27, 2020, subject to extension for market and other disruptions, as described in the product prospectus supplement dated January 11, 2016.

Term:

Approximately three (3) years

Principal at Risk:

The Notes are NOT principal protected. You may lose some or all of your principal amount at maturity if there is a percentage decrease from the Initial Level to the Final Level of more than 30%.

Calculation Agent:

RBCCM

U.S. Tax Treatment:

By purchasing a Note, each holder agrees (in the absence of a change in law, an administrative determination or a judicial ruling to the contrary) to treat the Note as a callable pre-paid cash-settled derivative contract for U.S. federal income tax purposes. However, the U.S. federal income tax consequences of your investment in the Notes are uncertain and the Internal Revenue Service could assert that the Notes should be taxed in a manner that is different from that described in the preceding sentence. Please see the discussion (including the opinion of our counsel Morrison & Foerster LLP) in the product prospectus supplement dated January 11, 2016 under “Supplemental Discussion of U.S. Federal Income Tax Consequences,” and the discussion below under “Supplemental Discussion of U.S. Federal Income Tax Consequences,” which apply to the Notes.

Secondary Market:

RBCCM (or one of its affiliates), though not obligated to do so, may maintain a secondary market in the Notes after the Issue Date. The amount that you may receive upon sale of your Notes prior to maturity may be less than the principal amount of your Notes.

Listing:

The Notes will not be listed on any securities exchange.

Clearance and Settlement:

DTC global (including through its indirect participants Euroclear and Clearstream, Luxembourg as described under “Description of Debt Securities—Ownership and Book-Entry Issuance” in the prospectus dated January 8, 2016).

Terms

Incorporated in the Master Note:

All of the terms appearing above the item captioned “Secondary Market” on pages P-2 and P-3 of this pricing supplement and the terms appearing under the caption “General Terms of the Notes” in the product prospectus supplement dated January 11, 2016, as modified by this pricing supplement.



Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

#### ADDITIONAL TERMS OF YOUR NOTES

You should read this pricing supplement together with the prospectus dated January 8, 2016, as supplemented by the prospectus supplement dated January 8, 2016 and the product prospectus supplement dated January 11, 2016, relating to our Senior Global Medium-Term Notes, Series G, of which these Notes are a part. Capitalized terms used but not defined in this pricing supplement will have the meanings given to them in the product prospectus supplement. In the event of any conflict, this pricing supplement will control. The Notes vary from the terms described in the product prospectus supplement in several important ways. You should read this pricing supplement carefully.

This pricing supplement, together with the documents listed below, contains the terms of the Notes and supersedes all prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Risk Factors” in the prospectus supplement dated January 8, 2016 and “Additional Risk Factors Specific to the Notes” in the product prospectus supplement dated January 11, 2016, as the Notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisors before you invest in the Notes. You may access these documents on the Securities and Exchange Commission (the “SEC”) website at [www.sec.gov](http://www.sec.gov) as follows (or if that address has changed, by reviewing our filings for the relevant date on the SEC website):

Prospectus dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008810/j18160424b3.htm>

Prospectus Supplement dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008811/p14150424b3.htm>

Product Prospectus Supplement ERN-ETF-1 dated January 11, 2016:

<https://www.sec.gov/Archives/edgar/data/1000275/000114036116047385/form424b5.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275. As used in this pricing supplement, “we,” “us,” or “our” refers to Royal Bank of Canada.

P-4 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes  
 Linked to the SPDR® S&P® Biotech ETF,  
 Due August 27, 2020

#### HYPOTHETICAL RETURNS

The table set out below is included for illustration purposes only. The table illustrates payment upon an automatic call and the Payment at Maturity of the Notes for a hypothetical range of performance for the Reference Asset, assuming the following terms:

Hypothetical Initial Level: \$1,000.00\*  
 Hypothetical Barrier Level: \$700.00, which is 70.00% of the hypothetical Initial Level  
 Principal Amount: \$1,000 per Note  
 Call Amounts: As set forth on page P-2

\* The hypothetical Initial Level of \$1,000.00 used in the examples below has been chosen for illustrative purposes only and is not the actual Initial Level. The actual Initial Level is set forth on page P-3 of this pricing supplement. It is possible that the Final Level will be less than the Initial Level.

#### Summary of the Hypothetical Examples

	Notes Are Called on an Observation Date			Notes Are Not Called on Any Observation Date	
	Example 1	Example 2	Example 3	Example 4	Example 5
Initial Level	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
Closing share price on the First Observation Date	\$1,200.00	\$900.00	\$900.00	\$880.00	\$980.00
Closing share price on the Second Observation Date	N/A	\$1,020.00	\$850.00	\$780.00	\$780.00
Closing share prices on the Third through 10 <sup>th</sup> Observation Dates	N/A	N/A	Various, below Initial Level	Various, below Initial Level	Various, below Initial Levels
Closing share price on the Final Observation Date	N/A	N/A	\$1,035.00	\$850.00	\$500.00
Percentage Change	N/A	N/A	N/A	-15.00%	-50.00%
Call Amount	\$1,048.00	\$1,072.00	\$1,288 (paid on the Maturity Date)	N/A	N/A
Payment at Maturity (if not previously called)	N/A	N/A	N/A	\$1,000	\$500

P-5 RBC Capital Markets, LLC



Auto-Callable Barrier Notes

Linked to the SPDR® S&P® Biotech ETF,

Due August 27, 2020

Hypothetical Examples of Amounts Payable Upon an Automatic Call

The following hypothetical examples illustrate payments of the Call Amounts set forth in the table on page P-2.

Example 1: The price of the Reference Asset increases by 20% from the Initial Level of 1,000.00 to a closing share price of 1,200.00 on the first Observation Date. Because the closing share price of the Reference Asset on the first Observation Date is greater than the Initial Level of 1,000.00, the investor receives on the applicable Call Settlement Date a cash payment of \$1,048.00, representing the corresponding Call Amount. After the Notes are called, they will no longer remain outstanding and there will be no further payments on the Notes.

Example 2: The price of the Reference Asset decreases by 10% from the Initial Level of 1,000.00 to its closing share price on the first Observation Date of 900 but the price of the Reference Asset increases by 2% from the Initial Level of 1,000.00 to a closing share price of 1,020.00 on the second Observation Date. Because the Notes are not called on the first Observation Date and the closing share price of the Reference Asset on the second Observation Date is greater than the Initial Level of 1,000.00, the investor receives on the applicable Call Settlement Date a cash payment of \$1,072.00, representing the corresponding Call Amount. After the Notes are called, they will no longer remain outstanding and there will be no further payments on the Notes.

Example 3: The Notes are not called on the first ten Observation Dates and the Final Level is 1,035.00 on the Valuation Date, which is greater than its Initial Level of 1,000.00. Because the Notes are not called on the first ten Observation Dates and the closing share price of the Reference Asset on the Valuation Date is greater than its Initial Level of 1,000.00, the investor receives on the Maturity Date a cash payment of \$1,288.00, representing the corresponding Call Amount.

Hypothetical Examples of Amounts Payable at Maturity

The following hypothetical examples illustrate how the payments at maturity set forth in the table above are calculated, assuming the Notes have not been called.

Example 1: The price of the Reference Asset decreases by 15% from the Initial Level of 1,000.00 to the Final Level of 850.00. The Notes are not called on any Observation Date because the closing share price of the Reference Asset is below the Initial Level on each Observation Date (including the Valuation Date). Because the Final Level of the Reference Asset is less than its Initial Level of 1,000 but greater than the Barrier Level of 700.00, the investor receives at maturity, a cash payment of \$1,000 per Note, despite the 15% decline in the price of the Reference Asset.

Example 2: The price of the Reference Asset is \$500.00 on the Valuation Date, which is less than the Barrier Level of \$700.00. The Notes are not called on any Observation Date because the closing share price the Reference Asset is below the Initial Level on each Observation Date (including the Valuation Date). Because the Final Level is less than the Barrier Level of 700.00, we will pay only \$500.00 for each \$1,000 in the principal amount of the Notes, calculated as follows:

$$\text{Principal Amount} + (\text{Principal Amount} \times \text{Percentage Change}) \\ = \$1,000 + (\$1,000 \times -50.00\%) = \$1,000 - \$500.00 = \$500.00$$

\* \* \*

The payments at maturity shown above are entirely hypothetical; they are based on prices of the Reference Asset that may not be achieved and on assumptions that may prove to be erroneous. The actual market value of your Notes on the Maturity Date or at any other time, including any time you may wish to sell your Notes, may bear little relation to the hypothetical payments at maturity shown above, and those amounts should not be viewed as an indication of the financial return on an investment in the Notes or on an investment in the securities included in the Reference Asset.

Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

#### SELECTED RISK CONSIDERATIONS

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Reference Asset. These risks are explained in more detail in the section “Additional Risk Factors Specific to the Notes,” beginning on page PS-6 of the product prospectus supplement. In addition to the risks described in the prospectus supplement and the product prospectus supplement, you should consider the following:

**Principal at Risk** – Investors in the Notes could lose all or a substantial portion of their principal amount if the Final Level is less than the Barrier Level. If the Notes are not automatically called and the Final Level is less than the Barrier Level, the amount of cash that you receive at maturity will represent a loss of your principal that is proportionate to the decline in the closing price of the Reference Asset from the Pricing Date to the Valuation Date. **The Notes Are Subject to an Automatic Call** — If, starting on February 23, 2018 and on any Observation Date thereafter, the closing price of the Reference Asset is greater than or equal to the Initial Level, then the Notes will be automatically called. If the Notes are automatically called, then, on the applicable Call Settlement Date, for each \$1,000 in principal amount, you will receive the applicable Call Amount on the corresponding Call Settlement Date. You will not receive any payments after the Call Settlement Date and you will not receive any return on the Notes that exceeds the applicable Call Amount provided above, even if the price of the Reference Asset increases substantially. You may be unable to reinvest your proceeds from the automatic call in an investment with a return that is as high as the return on the Notes.

**The Notes Do Not Pay Interest and Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable Maturity** – There will be no periodic interest payments on the Notes as there would be on a conventional fixed-rate or floating-rate debt security having the same maturity. The return that you will receive on the Notes, which could be negative, may be less than the return you could earn on other investments. Even if your return is positive, your return may be less than the return you would earn if you bought a conventional senior interest bearing debt security of Royal Bank.

**Your Potential Payment on the Notes Is Limited** – The Notes will provide less opportunity to participate in the appreciation of the Reference Asset than an investment in a security linked to the Reference Asset providing full participation in the appreciation, because the payment upon an automatic call will not exceed the applicable Call Amount. Accordingly, your return on the Notes may be less than your return would be if you made an investment in the Reference Asset or a security directly linked to the positive performance of the Reference Asset.

**Payments on the Notes Are Subject to Our Credit Risk, and Changes in Our Credit Ratings Are Expected to Affect the Market Value of the Notes** – The Notes are Royal Bank’s senior unsecured debt securities. As a result, your receipt of the amount due on any payment date is dependent upon Royal Bank’s ability to repay its obligations at that time. This will be the case even if the share price of the Reference Asset increases after the Pricing Date. No assurance can be given as to what our financial condition will be at any time during the term of the Notes.

**There May Not Be an Active Trading Market for the Notes—Sales in the Secondary Market May Result in Significant Losses** – There may be little or no secondary market for the Notes. The Notes will not be listed on any securities exchange. RBCCM and other affiliates of Royal Bank may make a market for the Notes; however, they are not required to do so. RBCCM or any other affiliate of Royal Bank may stop any market-making activities at any time. Even if a secondary market for the Notes develops, it may not provide significant liquidity or trade at

P-7 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes

Linked to the SPDR® S&P® Biotech ETF,

Due August 27, 2020

prices advantageous to you. We expect that transaction costs in any secondary market would be high. As a result, the difference between bid and asked prices for your Notes in any secondary market could be substantial.

**You Will Not Have Any Rights to the Securities Included in the Reference Asset –** As a holder of the Notes, you will not have voting rights or rights to receive cash dividends or other distributions or other rights that holders of securities included in the Reference Asset would have. The price of the Reference Asset on any Observation Date will not reflect any dividends paid on the securities included in the Reference Asset, and accordingly, any positive return on the Notes may be less than the potential positive return on those securities.

**The Initial Estimated Value of the Notes Is Less than the Price to the Public –** The initial estimated value set forth on the cover page of this pricing supplement does not represent a minimum price at which we, RBCCM or any of our affiliates would be willing to purchase the Notes in any secondary market (if any exists) at any time. If you attempt to sell the Notes prior to maturity, their market value may be lower than the price you paid for them and the initial estimated value. This is due to, among other things, changes in the share price of the Reference Asset, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the underwriting discount and the estimated costs relating to our hedging of the Notes. These factors, together with various credit, market and economic factors over the term of the Notes, are expected to reduce the price at which you may be able to sell the Notes in any secondary market and will affect the value of the Notes in complex and unpredictable ways. Assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Notes prior to maturity may be less than your original purchase price, as any such sale price would not be expected to include the underwriting discount and the hedging costs relating to the Notes. In addition to bid-ask spreads, the value of the Notes determined for any secondary market price is expected to be based on the secondary rate rather than the internal funding rate used to price the Notes and determine the initial estimated value. As a result, the secondary price will be less than if the internal funding rate was used. The Notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Notes to maturity.

**Our Business Activities May Create Conflicts of Interest —** We and our affiliates expect to engage in trading activities related to the Reference Asset or the securities held by the Reference Asset that are not for the account of holders of the Notes or on their behalf. These trading activities may present a conflict between the holders' interests in the Notes and the interests we and our affiliates will have in their proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for their customers and in accounts under their management. These trading activities, if they influence the price of the Reference Asset, could be adverse to the interests of the holders of the Notes. We and one or more of our affiliates may, at present or in the future, engage in business with the Reference Asset or the issuers of the securities held by the Reference Asset, including making loans to or providing advisory services. These services could include investment banking and merger and acquisition advisory services. These activities may present a conflict between our or one or more of our affiliates' obligations and your interests as a holder of the Notes. Moreover, we and our affiliates may have published, and in the future expect to publish, research reports with respect to the Reference Asset. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding the Notes. Any of these activities by us or one or more of our affiliates may affect the price of the Reference Asset, and, therefore, the market value of the Notes.

**The Initial Estimated Value of the Notes on the Cover Page of this Pricing Supplement Is an Estimate Only, Calculated as of the Time the Terms of the Notes Were Set –** The initial estimated value of the Notes is based on the value of our obligation to make the payments on the Notes, together with the mid-market value of



Auto-Callable Barrier Notes

Linked to the SPDR® S&P® Biotech ETF,

Due August 27, 2020

the derivative embedded in the terms of the Notes. See “Structuring the Notes” below. Our estimate is based on a variety of assumptions, including our credit spreads, expectations as to dividends, interest rates and volatility, and the expected term of the Notes. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Notes or similar securities at a price that is significantly different than we do.

The value of the Notes at any time after the Pricing Date will vary based on many factors, including changes in market conditions, and cannot be predicted with accuracy. As a result, the actual value you would receive if you sold the Notes in any secondary market, if any, should be expected to differ materially from the initial estimated value of your Notes.

**The Securities Composing the Underlying Index Are Concentrated in One Sector** — All of the securities included in the underlying index are issued by companies in the biotechnology industry. As a result, the securities that will determine the performance of the Reference Asset and the level of the underlying index, which the Reference Asset seeks to replicate, are concentrated in one sector. Although an investment in the Notes will not give holders any ownership or other direct interests in the securities composing the underlying index, the return on an investment in the Notes will be subject to certain risks associated with a direct equity investment in companies in this market sector. Accordingly, by investing in the Notes, you will not benefit from the diversification which could result from an investment linked to companies that operate in multiple sectors.

**An Investment in the Notes Is Subject to Risks Associated with the Biotechnology Sector** — All of the stocks held by the Reference Asset and included in its underlying index are issued by companies whose primary lines of business are directly associated with the biotechnology sector. The profitability of these companies is largely dependent on, among other things, demand for the companies’ products, safety of the companies’ products, regulatory influences on the biotechnology market (including receipt of regulatory approvals and compliance with complex regulatory requirements), pricing and reimbursement from third party payors, continued innovation, talent attraction and retention, maintaining intellectual property rights and intense industry competition. Any negative developments affecting the biotechnology sector could affect negatively the price of the Reference Asset and, in turn, could have an adverse effect on the value of the Notes and the payments on the Notes.

**Adjustments to the Reference Asset Could Adversely Affect the Notes** — SSgA Funds Management, Inc., as the investment adviser of the Reference Asset, is responsible for calculating and maintaining the Reference Asset. The investment adviser can add, delete or substitute the stocks comprising the Reference Asset. The investment adviser may make other methodological changes that could change the price of the Reference Asset at any time. If one or more of these events occurs, the calculation of the closing price of the Reference Asset on the Valuation Date or of the amount payable at maturity may be adjusted to reflect such event or events. Consequently, any of these actions could affect the payments on the Notes and their market value at any time.

**Changes that Affect the Underlying Index of the Reference Asset Will Affect the Market Value of the Notes and the Amount You Will Receive at Maturity** — The policies of the sponsor of the underlying index of the Reference Asset concerning the calculation of that index, additions, deletions or substitutions of the components of that index and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in that index and, therefore, could affect the share price of the Reference Asset, the amount payable on the Notes at maturity, if applicable, and the market value of the Notes prior to maturity. The amount payable on the Notes and their market value could also be affected if the sponsor changes these policies, for example, by changing the manner in which it calculates the index, or if the calculation or publication of the index is discontinued or suspended.



Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

There Is No Affiliation between the Investment Advisor or the Index Sponsor and RBCCM, and RBCCM Is Not Responsible for Any Disclosure by the Investment Advisor or the Index Sponsor — We are not affiliated with the investment adviser of the Reference Asset or the index sponsor of its underlying index. You, as an investor in the Notes, should make your own investigation into the Reference Asset and the companies in which it invests. None of these companies are involved in this offering, and have no obligation of any sort with respect to your Notes. These companies have no obligation to take your interests into consideration for any reason, including when taking any corporate actions that might affect the value of your Notes.

The Correlation Between the Performance of the Reference Asset and the Performance of the Underlying Index May Be Imperfect — The performance of the Reference Asset is linked principally to the performance of the Underlying Index. However, because of the potential discrepancies identified in more detail in the product prospectus supplement, the return on the Reference Asset may correlate imperfectly with the return on the Underlying Index.

Market Disruption Events and Adjustments – The payment at maturity or upon an automatic call are subject to adjustment as described in the product prospectus supplement. For a description of what constitutes a market disruption event as well as the consequences of that market disruption event, see “General Terms of the Notes—Market Disruption Events” in the product prospectus supplement.

P-10 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

#### INFORMATION REGARDING THE REFERENCE ASSET

Information provided to or filed with the SEC by the Reference Asset under the Securities Act of 1933, as amended, and the Investment Company Act of 1940, as amended, can be located by reference to SEC file numbers 333-57793 and 811-08839, respectively, through the SEC's website at <http://www.sec.gov>. In addition, information regarding the Reference Asset may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents. We have not participated in the preparation of, or verified, such publicly available information. None of the forgoing documents or filings are incorporated by reference in, and should not be considered part of, this document.

The following information regarding the Reference Asset is derived from publicly available information.

We have not independently verified the accuracy or completeness of reports filed by the Reference Asset with the SEC, information published by it on its website or in any other format, information about it obtained from any other source or the information provided below.

The Notes are not sponsored, endorsed, sold or promoted by the investment adviser. The investment adviser makes no representations or warranties to the owners of the Notes or any member of the public regarding the advisability of investing in the Notes. The investment adviser has no obligation or liability in connection with the operation, marketing, trading or sale of the Notes.

We obtained the information regarding the historical performance of the Reference Asset set forth below from Bloomberg Financial Markets.

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the market price of the Reference Asset on any Observation Date. We cannot give you assurance that the performance of the Reference Asset will not result in the loss of all or part of your investment.

The SPDR® S&P® Biotech ETF

The Reference Asset is an investment portfolio maintained and managed by SSgA Funds Management, Inc. The inception date of the Reference Asset is January 31, 2006. The Reference Asset is an exchange traded fund that trades on NYSE Arca under the ticker symbol "XBI."

The Reference Asset seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the S&P® Biotechnology Select Industry® Index (the "underlying index"). The underlying index represents the biotechnology sub-industry portion of the S&P Total Market Index ("S&P TMI"), an index that measures the performance of the U.S. equity market. The Reference Asset is composed of companies that are in the biotechnology sector.

The Reference Asset utilizes a "replication" investment approach in attempting to track the performance of the underlying index. The Reference Asset typically invests in substantially all of the securities which comprise the underlying index in approximately the same proportions as the underlying index. The Reference Asset will normally invest at least 80% of its total assets in the common stocks that comprise the underlying index.

The S&P® Biotechnology Select Industry® Index

The underlying index is an equal-weighted index that is designed to measure the performance of the biotechnology sub-industry portion of the S&P TMI. The S&P TMI includes all U.S. common equities listed on the NYSE (including NYSE



Auto-Callable Barrier Notes

Linked to the SPDR® S&P® Biotech ETF,

Due August 27, 2020

Arca), the NYSE MKT, the NASDAQ Global Select Market, and the NASDAQ Capital Market. Each of the component stocks in the underlying index is a constituent company within the biotechnology sub-industry portion of the S&P TMI.

To be eligible for inclusion in the underlying index, companies must be in the S&P TMI and must be included in the relevant Global Industry Classification Standard (GICS) sub-industry. The GICS was developed to establish a global standard for categorizing companies into sectors and industries. In addition to the above, companies must satisfy one of the two following combined size and liquidity criteria:

- float-adjusted market capitalization above US\$500 million and float-adjusted liquidity ratio above 90%; or

- float-adjusted market capitalization above US\$400 million and float-adjusted liquidity ratio above 150%.

All U.S. companies satisfying these requirements are included in the underlying index. The total number of companies in the underlying index should be at least 35. If there are fewer than 35 stocks, stocks from a supplementary list of highly correlated sub-industries that meet the market capitalization and liquidity thresholds above are included in order of their float-adjusted market capitalization to reach 35 constituents. Minimum market capitalization requirements may be relaxed to ensure there are at least 22 companies in the underlying index as of each rebalancing effective date.

Eligibility factors include:

**Market Capitalization:** Float-adjusted market capitalization should be at least US\$400 million for inclusion in the underlying index. Existing index components must have a float-adjusted market capitalization of US\$300 million to remain in the underlying index at each rebalancing.

**Liquidity:** The liquidity measurement used is a liquidity ratio, defined as dollar value traded over the previous 12-months divided by the float-adjusted market capitalization as of the underlying index rebalancing reference date. Stocks having a float-adjusted market capitalization above US\$500 million must have a liquidity ratio greater than 90% to be eligible for addition to the underlying index. Stocks having a float-adjusted market capitalization between US\$400 and US\$500 million must have a liquidity ratio greater than 150% to be eligible for addition to the underlying index. Existing index constituents must have a liquidity ratio greater than 50% to remain in the underlying index at the quarterly rebalancing. The length of time to evaluate liquidity is reduced to the available trading period for IPOs or spin-offs that do not have 12 months of trading history.

**Takeover Restrictions:** At the discretion of S&P, constituents with shareholder ownership restrictions defined in company bylaws may be deemed ineligible for inclusion in the underlying index. Ownership restrictions preventing entities from replicating the index weight of a company may be excluded from the eligible universe or removed from the underlying index.

**Turnover:** S&P believes turnover in index membership should be avoided when possible. At times, a company may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to the underlying index, not for continued membership. As a result, an index constituent that appears to violate the criteria for addition to the underlying index will not be deleted unless ongoing conditions warrant a change in the composition of the underlying index.

P-12 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes

Linked to the SPDR® S&P® Biotech ETF,

Due August 27, 2020

Historical Information

The graph below sets forth information relating to the historical performance of the Reference Asset. In addition, below the graph is a table setting forth the intra-day high, intra-day low and period-end closing share prices of the Reference Asset. The information provided in this table is for the four calendar quarters of 2013 through 2016, the first two calendar quarters of 2017 and the period from July 1, 2017 through August 23, 2017.

We obtained the information regarding the historical performance of the Reference Asset in the chart below from Bloomberg Financial Markets.

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the price of the Reference Asset at any time. We cannot give you assurance that the performance of the Reference Asset will result in any positive return on your initial investment. SPDR® S&P® Biotech ETF (“XBI”)

P-13 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes  
 Linked to the SPDR® S&P® Biotech ETF,  
 Due August 27, 2020

Period-Start Date	Period-End Date	High Intra-Day Share Price of the Reference Asset (\$)	Low Intra-Day Share Price of the Reference Asset (\$)	Period-End Closing Share Price of the Reference Asset (\$)
1/1/2013	3/31/2013	33.58	29.99	33.29
4/1/2013	6/30/2013	37.84	32.13	34.75
7/1/2013	9/30/2013	44.14	35.68	43.05
10/1/2013	12/31/2013	44.11	37.79	43.40
1/1/2014	3/31/2014	57.50	42.70	47.49
4/1/2014	6/30/2014	51.92	38.46	51.35
7/1/2014	9/30/2014	54.64	44.66	51.99
10/1/2014	12/31/2014	63.90	47.28	62.21
1/1/2015	3/31/2015	81.57	60.67	75.17
4/1/2015	6/30/2015	87.20	67.88	84.08
7/1/2015	9/30/2015	91.11	59.16	62.25
10/1/2015	12/31/2015	73.80	60.27	70.08
1/1/2016	3/31/2016	69.11	44.16	51.66
4/1/2016	6/30/2016	59.87	48.98	54.09
7/1/2016	9/30/2016	69.20	53.80	66.29
10/1/2016	12/31/2016	68.16	53.16	59.19
1/1/2017	3/31/2017	72.58	58.67	69.34
4/1/2017	6/30/2017	80.84	66.00	77.18
7/1/2017	8/23/2017	82.37	74.26	76.97

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

P-14 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

#### SUPPLEMENTAL DISCUSSION OF U.S. FEDERAL INCOME TAX CONSEQUENCES

The following disclosure supplements, and to the extent inconsistent supersedes, the discussion in the product prospectus supplement dated January 11, 2016 under “Supplemental Discussion of U.S. Federal Income Tax Consequences.”

Under Section 871(m) of the Code, a “dividend equivalent” payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments (“ELIs”) that are “specified ELIs” may be treated as dividend equivalents if such specified ELIs reference an interest in an “underlying security,” which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, the IRS has issued guidance that states that the U.S. Treasury Department and the IRS intend to amend the effective dates of the U.S. Treasury Department regulations to provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2019. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Reference Asset or the Notes, and following such occurrence the Notes could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the Reference Asset or the Notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

#### SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

Delivery of the Notes will be made against payment for the Notes on or about August 28, 2017, which is the third (3<sup>rd</sup>) business day following the Pricing Date (this settlement cycle being referred to as “T+3”). See “Plan of Distribution” in the prospectus. For additional information as to the relationship between us and RBC Capital Markets, LLC, please see the section “Plan of Distribution-Conflicts of Interest” in the prospectus.

In the initial offering of the Notes, they will be offered to investors at a purchase price equal to par, except with respect to certain accounts as indicated on the cover page of this document.

The value of the Notes shown on your account statement may be based on RBCCM’s estimate of the value of the Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based upon the price that RBCCM may pay for the Notes in light of then prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately three months after the issue date of the Notes, the value of the Notes that may be shown on your account statement may be higher than RBCCM’s estimated value of the Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount and our hedging costs and profits; however, the value of the Notes shown on your account statement during that period may be a higher amount, reflecting the addition of RBCCM’s underwriting discount and our estimated costs and profits from hedging the Notes. This excess is expected to decrease over time until the end of this period. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect their estimated value.

Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

#### STRUCTURING THE NOTES

The Notes are our debt securities, the return on which is linked to the performance of the Reference Asset. As is the case for all of our debt securities, including our structured notes, the economic terms of the Notes reflect our actual or perceived creditworthiness at the time of pricing. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these Notes at a rate that is more favorable to us than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. Using this relatively lower implied borrowing rate rather than the secondary market rate, is a factor that reduced the initial estimated value of the Notes at the time their terms were set. Unlike the estimated value included in this pricing supplement, any value of the Notes determined for purposes of a secondary market transaction may be based on a different funding rate, which may result in a lower value for the Notes than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the Notes, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the issue date with RBCCM or one of our other subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, the volatility of the Reference Asset, and the tenor of the Notes. The economic terms of the Notes and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate is a factor that reduced the economic terms of the Notes to you. The initial offering price of the Notes also reflects the underwriting commission and our estimated hedging costs. These factors resulted in the initial estimated value for the Notes on the Pricing Date being less than their public offering price. See “Selected Risk Considerations—The Initial Estimated Value of the Notes Is Less than the Price to the Public” above.

P-16 RBC Capital Markets, LLC

---

Auto-Callable Barrier Notes  
Linked to the SPDR® S&P® Biotech ETF,  
Due August 27, 2020

#### VALIDITY OF THE NOTES

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the Notes has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the Notes have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the Notes will be validly issued and, to the extent validity of the Notes is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, and will be valid obligations of the Bank, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the Notes or the Indenture which may be limited by applicable law; to insolvency and other laws of general application affecting creditors' rights, to limitations under applicable limitations statutes, and to limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated January 8, 2016, which has been filed as Exhibit 5.1 to Royal Bank's Form 6-K filed with the SEC dated January 8, 2016.

In the opinion of Morrison & Foerster LLP, when the Notes have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the Notes will be valid, binding and enforceable obligations of the Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith). This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the legal opinion dated January 8, 2016, which has been filed as Exhibit 5.2 to the Bank's Form 6-K dated January 8, 2016.

P-17 RBC Capital Markets, LLC

---