Selecta Biosciences Announces Publication in Nature Nanotechnology Describing Novel Approach for Improving the Efficacy and Safety Profile of Biologic Drugs

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- *Published results from preclinical studies show the potential of Selecta's proprietary SVP-Rapamycin (SEL-110) immune therapy to improve the efficacy and safety of biologic therapeutics*
- *The data support Selecta's lead clinical program, showing Selecta's SVP-Rapamycin (SEL-110) induces antigen-specific immune tolerance and prevents the formation of anti-drug antibodies (ADAs) to biologic drugs, including pegsiticase (for gout) and adalimumab (for rheumatoid arthritis)*

WATERTOWN, Mass., Aug. 01, 2016 (GLOBE NEWSWIRE) -- Selecta Biosciences, Inc. (NASDAQ:SELB), a clinical-stage biopharmaceutical company developing targeted antigen-specific immune therapies for rare and serious diseases, announced today that *Nature Nanotechnology* has published an article that presents preclinical results from Selecta's research which demonstrate the broad potential applicability of Selecta's novel immune tolerance platform. Details that elucidate the mechanism of action of the company's immune tolerance therapy, SVP-Rapamycin (SEL-110), were also shown. Data in the publication support the Company's lead clinical program, showing Selecta's SVP-Rapamycin (SEL-110) induces antigen-specific immune tolerance and mitigates the formation of anti-drug antibodies (ADAs) to biologic drugs, including pegsiticase (for gout) and adalimumab (for rheumatoid arthritis).

"Undesired immune responses affect both the efficacy and safety of marketed biologic therapies and the development of otherwise promising new technologies. Selecta's SVP platform positions the company to enhance biologic therapy and to advance a pipeline of proprietary products that meet the therapeutic needs of patients with rare and serious diseases," said Werner Cautreels, PhD, Chairman of the Board, CEO and President of Selecta Biosciences. "This publication in *Nature Nanotechnology* highlights the mechanism by which Selecta's proprietary nanoparticles induce lasting antigen-specific tolerance. We believe that SVP-Rapamycin has the potential to mitigate ADAs against a broad range of biologic therapies."

In the *Nature Nanotechnology* journal article, Selecta presents validation of the immune tolerance mechanism of action of the company's technology, demonstrating that poly (lactic-co-glycolic acid) (PLGA) nanoparticles encapsulating rapamycin, but not free rapamycin, are capable of inducing durable immunological tolerance to co-administered proteins. This robust immune tolerance is characterized immunologically by: (1) induction of tolerogenic dendritic cells; (2) an increase in regulatory T cells; (3) reduction in B cell activation and germinal center formation; and (4) inhibition of antigen-specific hypersensitivity reactions.

Data presented in the journal article support the Company's clinical lead program in gout, showing that intravenous co-administration of tolerogenic nanoparticles with pegylated uricase inhibited the formation of ADAs in mice and nonhuman primates and normalized serum uric acid levels in uricase-deficient mice. Underscoring the broad potential of the approach, results additionally show that subcutaneous co-administration of nanoparticles with adalimumab durably inhibited ADAs, resulting in normalized pharmacokinetics of the anti-TNFα antibody and protection against arthritis in TNFα transgenic mice.

In the published research, the induction of specific immune tolerance by SVP-Rapamycin (SEL-110) versus chronic immune suppression is supported by the findings that: (1) antigen must be co-administered at the time of SVP-Rapamycin (SEL-110) treatment; (2) immune tolerance is durable to many challenges of antigen alone; (3) animals tolerized to a specific antigen are capable of responding to an unrelated antigen, meaning that SVP-Rapamycin (SEL-110) does not induce a broad immune suppression; and (4) activation of naïve T cells is inhibited when adoptively transferred into previously tolerized mice. In contrast, daily administration of free rapamycin, at five times the total weekly rapamycin dose as that administered in the SVP-Rapamycin, was observed to transiently suppress the immune response, but did not induce durable immunological tolerance.

About Selecta

Selecta Biosciences, Inc. is a clinical-stage biopharmaceutical company developing targeted therapies that use immunomodulators encapsulated in nanoparticles to induce antigen-specific immune responses to prevent and treat disease. Selecta's proprietary Synthetic Vaccine Particle (SVP) technology is a highly flexible nanoparticle platform, capable of incorporating a wide range of antigens and immunomodulators, allowing the SVP products to either induce antigen-specific tolerance or activate the immune system.

Selecta's focus is on developing and commercializing differentiated therapies that are designed to modulate the immune system to effectively and safely treat rare diseases by mitigating the formation of anti-drug antibodies (ADAs) in response to life-sustaining biologic drugs. Tolerance-inducing SVP products also have potential applications in the treatment of allergies and autoimmune diseases.

Selecta is also developing SVP products that activate the immune system to prevent and treat cancer, infections and other diseases.

Selecta is based in Watertown, Massachusetts, USA.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this press release that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation statements regarding the potential utility of SVP-Rapamycin (SEL-110) immune therapy to enable repeat dosing and to enhance gene therapy treatment for rare and serious diseases and the potential of SVP-Rapamycin.

These forward-looking statements are based on management's current expectations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: we have incurred significant losses, are not currently profitable and may never become profitable; our need for additional funding, which may not be available; our limited operating history; the impact on our operations and financial flexibility of the restrictive covenants of our indebtedness; limitations on our ability to use our net operating loss and research and development tax credit carryforwards; the unpredictable nature of our development efforts for marketable drugs; the unproven approach to antigen-specific immune therapies; the lengthy, expensive and uncertain process of clinical drug development; potential delays in enrollment of patients, which could affect the receipt of necessary regulatory approvals; potential delays in regulatory approval, which would impact the ability to commercialize our product candidates and affect our ability to generate revenue; our inability to obtain orphan drug designation or breakthrough therapy designation for our product candidates; our reliance on third parties to manufacture our product candidates and to conduct our clinical trials; our inability to maintain our existing collaborations; our lack of experience in manufacturing our product candidates; failure to achieve market acceptance in the medical community; our inability to establish effective sales, marketing and distribution capabilities; potential competition with respect to our product candidates; failure to obtain marketing approval internationally; post-marketing restrictions or withdrawal from the market; anti-kickback, fraud, abuse, and other healthcare laws and regulations exposing us to potential criminal sanctions; negative public opinion and increased regulatory scrutiny of gene therapy and genetic research; our inability to adequately protect our proprietary technology; changes in United States patent law; potential lawsuits for infringement of third-party intellectual property; our patents being found invalid or unenforceable; claims challenging the inventorship or ownership of our patents and other intellectual property; claims asserting that we or our employees misappropriated a third-party's intellectual property or otherwise claiming ownership of what we regard as our intellectual property; adequate protection of our trademarks; ability to attract and retain key executives; our inability to manage our growth; risks associated with operating internationally; potential system failures; the price of our common stock may fluctuate substantially; a significant portion of our total outstanding shares are eligible to be sold into the market in the near future; and we may be subject to securities class action

litigation.

These and other important factors discussed under the caption “Risk Factors” in our final prospectus filed with the Securities and Exchange Commission, or SEC, on June 23, 2016 relating to our Registration Statement on Form S-1, and our other reports filed with the SEC could cause actual results to differ materially from those indicated by the forward-looking statements made in this press release. Any such forward-looking statements represent management’s estimates as of the date of this press release. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this press release.

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Selecta Biosciences Inc