Docket #: S15-019

Novel antibodies to measure Neuromedin U

Circulating levels of Neuromedin U (NMU) peptide are correlated with insulin resistance and obesity and dynamically regulated to suppress insulin secretion. Using three novel monoclonal antibodies with an enzyme linked immunosorption assay, Stanford researchers can quickly and sensitively measure NMU in serum or other fluids specifically in humans or mice. By accurately measuring the concentration in human blood, the risk of diabetes mellitus may be predicted before onset of the disease. This approach can also have applications to assess risk of pancreatic cancer for diabetes patients, as well as metaplasia and cancer for pancreatitis patients. These new anti-mouse and human NMU antibodies also present an opportunity to facilitate research NMU in mammals.

Applications

- **Human antibodies for therapeutics**
  - *For patients with obesity, pancreatitis, or diabetes:* stratify patient response
  - *For patients with obesity:* assess risk for developing diabetes
  - *For patients with pancreatitis:* assess risk for metaplasia and cancer
  - *For patients with diabetes:* asses risk for developing pancreatic cancer
- **Mouse and human antibodies for research**
  - To further study the diverse functions of NMU

Advantages

- **Low cost**
- **No need for EDTA coated tubes and not effected by the presence of EDTA:** potentially reduce number of vials needed from patient

- **Doesn't require target peptide isolation:**
  - more consistent results
  - only requires 1.0 µl of serum instead of 1,000 µl
- **Detection limit and sensitivity are vastly improved:** commercially available tests only use one antibody and thus have a much more limited range
- **Results available in 2 – 3 hours**

Publications

- Researchers discover insulin-decreasing hormone in flies, humans (Stanford News Center)

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