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# Hit optimization and lead generation activating PROKR1 to prevent and treat sarcopenia

Seoul National University

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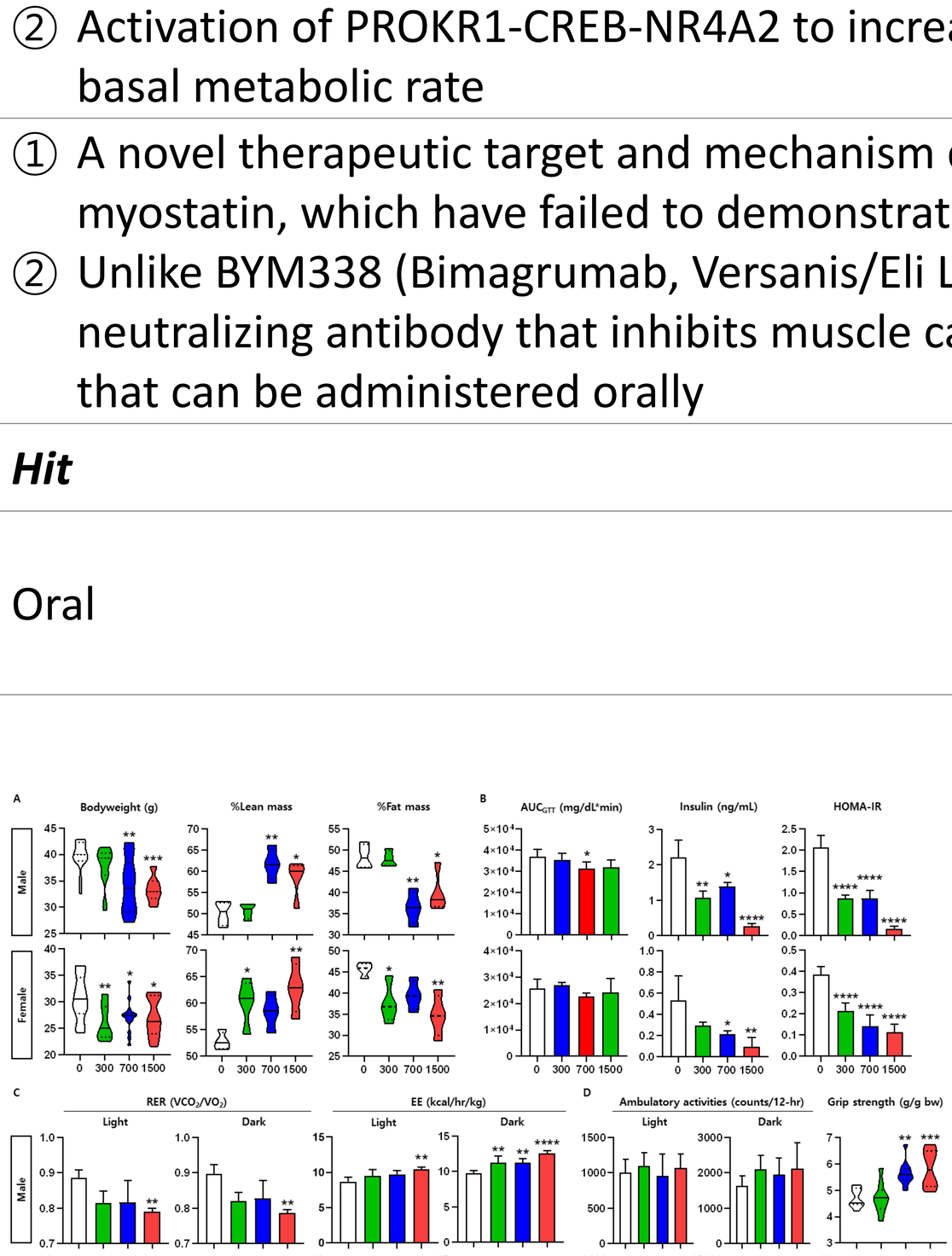
| **Disease Area** | ***Muscular dystrophy*** |
| **Product Type** | Small molecue |
| **Indication** | Sarcopenia, sarcopenic obesity |
| **Target** | Prokineticin receptor 1 (PROKR1/GPR73) |
| **Mechanism of Action** | ① PROKR1 agonist<br>② Activation of PROKR1-CREB-NR4A2 to increase muscle mass, strength, and basal metabolic rate |
| **Competitiveness** | ① A novel therapeutic target and mechanism differentiated from androgens and myostatin, which have failed to demonstrate clinical efficacy<br>② Unlike BYM338 (Bimagrumab, Versanis/Eli Lilly), which is a myostatin-neutralizing antibody that inhibits muscle catabolism, it is a small molecule that can be administered orally |
| **Development Stage** | ***Hit*** |
| **Route of Administration** | Oral |

## Key Data




**Improved muscle phenotype in mouse offspring by SP73C1001 exposure**

A. Dose-dependent decreased body weight and fat mass, and increased muscle mass in male and female offspring by SP73C1001. B. SP73C1001-induced improvement in insulin resistance. C. Increased energy expenditure by SP73C1001. D. Increased ambulatory activities and grip strength by SP73C1001. E. Increased Myh7(+) oxidative muscle fiber composition, decreased muscle fiber size, and increased mitochondria mass by SP73C1001. F. Activation of the Prokr1-Creb-Nr4a2 signaling pathway in muscle tissue by SP73C1001. PPM: particles per million diet (PPM/10 = mg/kg bodyweight, e.g. 700 PPM = 70 mg/kg bodyweight)

## IP