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Next generation protein sequencing (NGPS) enables rapid full-length *de novo* antibody and other protein sequence determination

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Complete sequence determination of antibodies and unknown proteins is considered challenging using high-throughput technologies. We developed next generation protein sequencing (NGPS), a novel method for *de novo*, full-length protein sequencing in high throughput. We first present a proof-of-concept for NGPS by applying it to bovine serum albumin (584 amino acids), equine myoglobin (153 amino acids) and bovine fetuin (342 amino acids). Excluding leucine/isoleucine and glutamic acid/deamidated glutamine ambiguities, end to end, full-length sequencing was achieved with 99-100% accuracy. Using NGPS, we were also able to obtain complete and rapid amino acid sequencing of antibodies, including the variable regions without using a reference database. We anticipate that this new method will mark the beginning of database independent proteomic analysis.

Biography

Alon Savidor completed his PhD in 2008 from the University of Tennessee and The Oak-Ridge National Lab, Tennessee, USA. He is a Staff Scientist in the de Botton Institute for Protein Profiling at the Nancy and Stephen Grand Israel National Center for Personalized Medicine. He has published more than a dozen papers and book chapters in reputed journals including *Science*, *Nature* and *Cell*.

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