

## Publication

## Purification of Biotinylated Proteins Using Single Walled Carbon Nanotube-Streptavidin Complexes

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4530692**Author(s)** Wang, Run; Boleij, Marissa; Yin, Qu; Galjart, Niels; Lin, Bencai; Yuan, Ningyi; Zhou, Xiang; Tan, Ming; Ding, Jianning; Liu, Zunfeng; Abrahams, Jan Pieter**Author(s) at UniBasel** [Abrahams, Jan Pieter](#) ;**Year** 2017**Title** Purification of Biotinylated Proteins Using Single Walled Carbon Nanotube-Streptavidin Complexes**Journal** Journal of nanoscience and nanotechnology**Volume** 17**Number** 2**Pages / Article-Number** 926-31**Keywords** SWNT-Streptavidin; Bioinylated Proteins; Chick Egg Albumin**Mesh terms** Albumins, chemistry, isolation & purification, metabolism; Animals; Biotin, chemistry, metabolism; Biotinylation; Chickens; Nanotubes, Carbon, chemistry; Recombinant Proteins, chemistry, isolation & purification, metabolism; Streptavidin, chemistry, metabolism

In this study, Single walled carbon nanotube (SWNT)-streptavidin complexes were used to capture and purify biotinylated proteins, including bio-GFP and bio-DBS using a pull-down method. The purification conditions were systematically studied, including surface blocking of SWNT using chicken egg albumin (CEA), the ratio of SWNT-streptavidin complexes to the cell lysate, as well as the centrifugation speed. Optimization of the protein purification using SWNT-streptavidin complexes shows the possibility of carbon nanotubes as a promising candidate for protein purification applications. The SWNT-streptavidin could be used as a scaffold to analyze protein structure directly by cryo-transmission electron microscopy, which provides better understanding in protein-protein interactions and biological processes.

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