

## **The cationic colloidal silica strategy for purification of adherent, integral, plasma membrane proteomes from epithelial cells**

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The plasma membrane is a desirable source for discovery of both biomarkers and drug targets. However, purification of the plasma membrane specifically is often troublesome due to the relative abundance of other cellular membranes and variability in membrane density between cell lines. Additionally, classical membrane preparations are often heavily contaminated with abundant basic proteins, such as histones and ribosomal proteins (Simpson et al., 2000). Here we present a method for the purification of the adherent plasma membrane from epithelial cell lines using cationic colloidal silica apical membrane subtraction (Goode and Simpson, in press) and demonstrate its specificity for integral plasma membrane proteins through detailed proteomic analysis. Of over 200 manually validated identifications, over 50% possess between 1 and 12 transmembrane domains, including over 30 CD antigens and several markers of the basolateral plasma membrane.

Goode, R.J.A. and Simpson, R.J. (in press). "Purification of basolateral integral membrane proteins by cationic colloidal silica-based apical membrane subtraction" in Proteomic analysis of membrane proteins: Methods and protocols in Methods in Molecular Medicine series.

Simpson, R. J., et al. (2000). "Proteomic analysis of the human colon carcinoma cell line (LIM 1215): Development of a membrane protein database." Electrophoresis 21(9): 1707-1732.

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