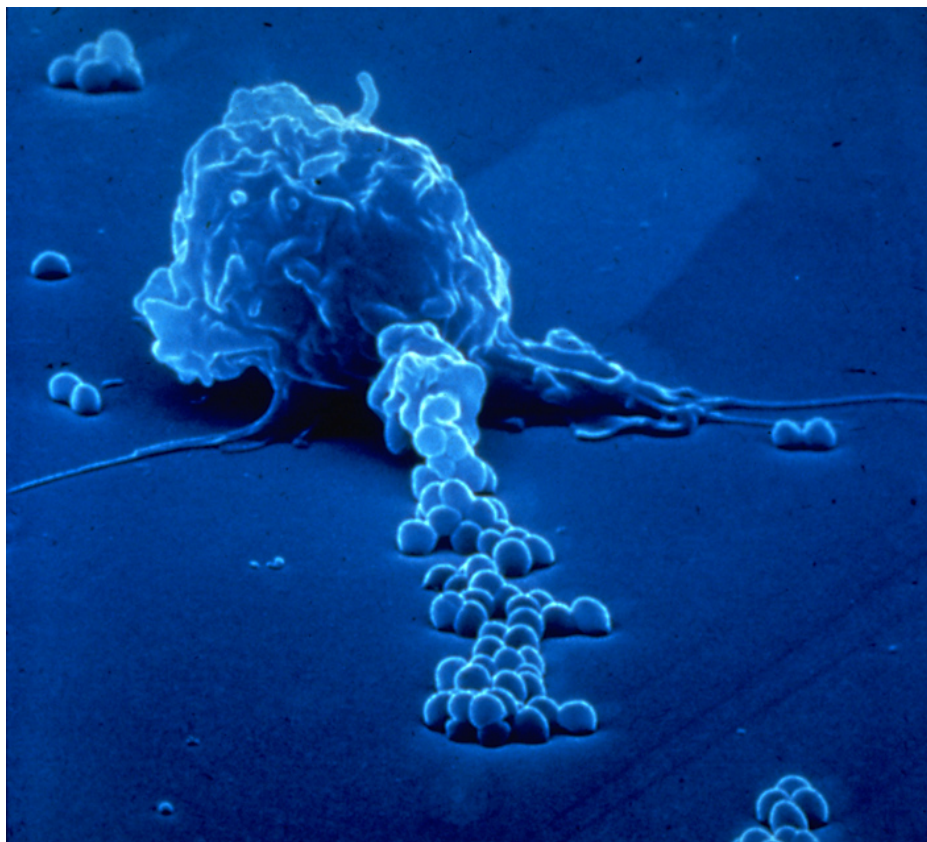


Proteomic Analysis of Inflammatory Macrophage Death and Activation

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http://www.aids-info.ch/e_te/aas-e-imm.htm

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Proteomic Analysis of Inflammatory Macrophage Death and Activation

What proteins are involved in proinflammatory macrophage, “Pyroptosis”, death and in activation of macrophages?

Why is this important?

Tissue Damage:

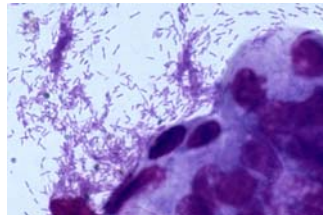
Heart attacks



Strokes



Bacterial infections



Better understanding of the immune system, and disease response

Provide knowledge base for possible treatments



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Proteomic Analysis of Inflammatory Macrophage Death and Activation

EXPERIMENTAL APPROACHES:

A very common and reliable tool for large scale protein identification studies

2D-Gel Electrophoresis

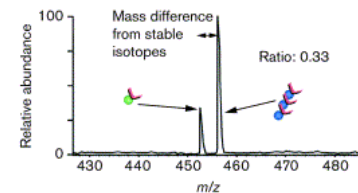
**2D Capillary Electrophoresis (2D-CE)
(with laser-induced fluorescence)**

Isotope Coded Affinity Tagging (ICAT)

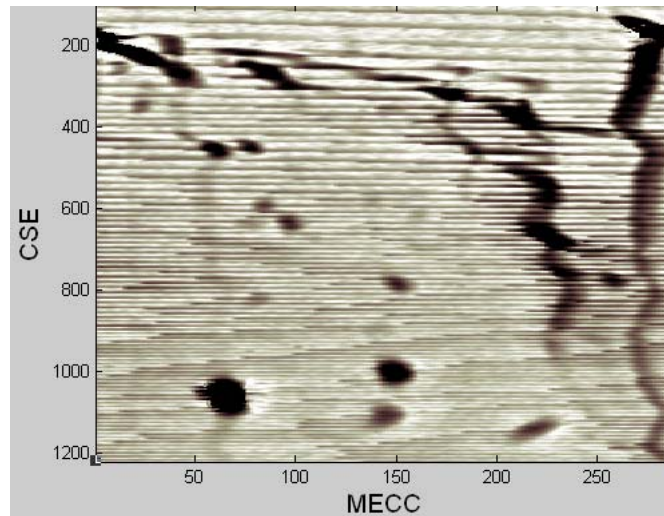
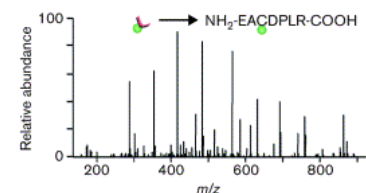
Provides enough sensitivity to analyze minute amounts of biological material (10^{-18} to 10^{-21} moles)

Allows for comparative quantitation of protein in two sample types

Quantitate relative protein levels by measuring peak ratios



Identify peptide by sequence information (MS/MS scan)



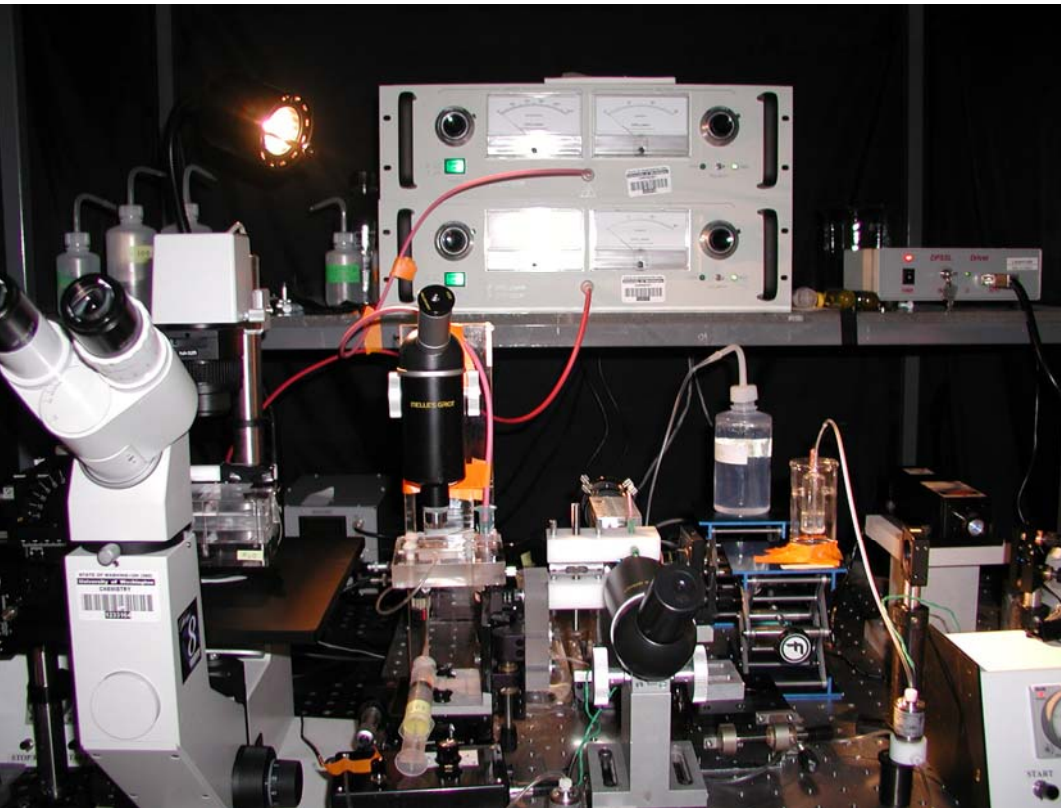
Proteomic Analysis of Inflammatory Macrophage Death and Activation

Progress so far:

- ~200 proteins identified in Salmonella induced proinflammatory macrophage cell death
- ~200 proteins identified in activated macrophages
- Many single cell CE protein separations have been run, separation profile and reproducibility are improving

Future Work:

- Qualify the heterogeneity of protein expression in single cells with 2D-CE
- Quantify protein expression with ICAT in macrophages undergoing proinflammatory cell death and in activated macrophages



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