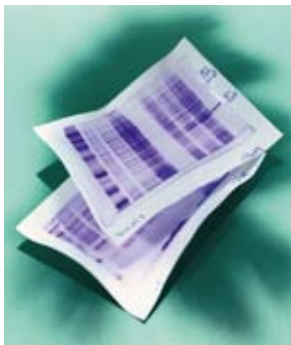




## chromatography



ligustrosid aglycone and oleuropein aglycone were able to induce important tumoricid effects in a selective way against HER2 oncogene.

### Protein differences between IVF and spontaneous pregnancies

Researchers have unveiled findings that show that there are distinct differences in protein detection between IVF and spontaneous pregnancies in the first half of gestation.

The study comprised 110 women (55 IVF and 55 spontaneous pregnancies), who were recruited at the University Hospital of Oulu, Oulu, Finland, between 2001 and 2006.

Maternal sera were collected at 11 and 19 gestational weeks. Proteome analysis was performed using fluorescence 2D gel electrophoreses, multidimensional liquid chromatography tandem mass spectrometry and label-free quantification. The process identified 368 unique proteins.

Protein differences between the IVF and spontaneous pregnancy patients included differences in extra-cellular matrix, cytoskeletal, vascular, complement and transport proteins — all of which are important in placentation. Most of the differences disappeared by 19 weeks; only pregnancy-specific glycoprotein-1 (PSG1) remained significantly different.

### Medications in wastewater

A study on downstream and upstream water from the Montreal wastewater treatment plant has revealed the presence of chemotherapy products and certain hypertension and cholesterol medications.

Bezafibrate (cholesterol reducing medication), enalapril (hypertension medication), methotrexate and cyclophosphamide (two products used in the treatment of certain cancers) have all been detected in wastewater entering the Montreal treatment station. However, only bezafibrate and enalapril have been detected in the treated water leaving the wastewater treatment plant and in the surface water of the St Lawrence River, where the treated wastewater is released.

This study was conducted due to the sharp rise in drug consumption over the past few years. In 1999, according to a study by IMS Health Global Services, world drug consumption amounted to \$342 billion. In 2006, that figure doubled to \$643 billion. A significant proportion of the drugs consumed are excreted by the human body in urine and end up in municipal wastewater. Chemotherapy products, such as methotrexate, are excreted by the body practically unchanged (80 to 90% in their initial form). The pharmaceutical compounds studied were chosen because of the large quantities prescribed by physicians.

The research team validated a rapid detection method based on online solid-phase extraction and LC-MS/MS.

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