

Project Title: **Analysis of Iodine in biological fluids following dermal exposure to seaweed.**

There is evidence that Iodine is absorbed transdermally after topical application of Iodine preparations but little is known about transdermal iodine absorption (if any) from dermal contact with iodine rich natural sources such as seaweeds.

This research project aims to investigate transdermal absorption of iodine. Phase one aims to set up and validate analytical methods for analysis of iodine, iodide and iodate( $\text{IO}_4^-$ ) in biological fluids (ideally saliva or urine) at the relevant concentration ranges (approx 20 – 200  $\mu\text{g/L}$ ) using Ion Chromatography and other techniques. Phase two will require the design, ethical approval and execution of a human study to measure potential changes in biological iodine levels following topical exposure to seaweed through seaweed baths or other seaweed based products.

The project will be supervised by Dr Aodhmar Cadogan and Geraldine Duignan in the Dept. of Applied Science and will involve working with a local commercial collaborator.

The position is available to start from September 2012 and is open to students with at least a 2:1 honours degree in analytical chemistry or a closely related subject. Candidates should have a demonstrated ability to work independently, should be highly motivated with good project management, technical and communication skills.

There is evidence to suggest that Irish population are deficient in Iodine. Seaweed (macroalgae) is an abundant natural resource with high iodine content: an important micronutrient essential for normal thyroid function, growth and development. Although

iodine deficiency can be easily prevented through adequate dietary intake of iodine (most commonly achieved by use of iodised salt), iodisation of salt is not common in Ireland.