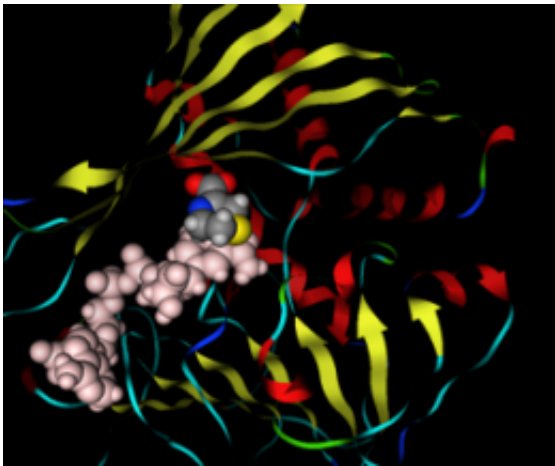


# Twenty-year protein mystery solved with surprising results

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(PhysOrg.com) -- A new study of the CRYM protein, previously connected with deafness and cancer, has now proven that it has an enzymatic function. This opens up new implications for the treatment of neurological and psychiatric conditions, even suggesting that diet choices might influence their progression.

In spite of more than 20 years of research efforts, the enzymatic function of the CRYM protein has remained elusive. Previous research has shown that CRYM functions both as an important structural protein and a binder of thyroid hormones, but PhD student Andre Hallen suspected something more.

"CRYM was first discovered in the ocular lens of marsupials, that is, in Skippy's eye! Since then, we've seen it in lamb brains, in other tissues and learnt how it can be observed and mutated in mammals like humans. Now we can see more of its full potential in human health and nutrition," Hallen explains.

In a study published in the [Journal of Neurochemistry](#), Hallen conclusively demonstrated an [enzyme function](#) for CRYM, and identified how this [enzymatic activity](#) reveals a new role for [thyroid hormones](#) in regulating mammalian amino acid metabolism.

It also recognises a possible reciprocal role of enzyme activity in regulating bioavailability of intracellular T3, with further research pathways for how this regulatory role might open up new treatment options for a range of neurological and [psychiatric conditions](#).

Hallen lead a team of scientists on this study, including three months working in North America with Dr Arthur Cooper, a world authority on neurochemistry and amino acid chemistry.

His research has also sparked the interest of [international scientists](#), including Patrick W Reed and Robert J Bloch of the University of Maryland, who profiled Hallen's work in their article 'Crystallin-Gazing: Unveiling Enzymatic Activity'.

In 2012, Hallen will continue his research into this area, further exploring the role of diet in influencing hormone function, and the effects of these changes on the CRYM protein, its related mutations and conditions.

Provided by Macquarie University

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