Hairbrush Inspired by Cat Tongue Grooming Mechanics (#7460)

A brush design based off the grooming mechanics of a cat tongue

Inventors at Georgia Tech have designed a hairbrush based on the grooming mechanics of a cat tongue. This technology allows for easy cleaning and de-tangling of hair and fur by using uniquely shaped spines embedded in a soft substrate. The nonlinear force applied by the spines helps to increase efficacy of grooming. The unique shape and flexibility of the spines allow for easier removal of tangles in hair and fur as compared to a standard plastic hairbrush.

Benefits/Advantages

- Easy to clean: Easy removal of hair between bristles
- Adaptable: Can conform over any curved surface
- Effective: Claw-like shape of the spines enables a firm grip to any snag

Potential Commercial Applications

- Human and pet grooming tools
- Wound cleaning in the medical field
- Hair removal for carpet cleaning
- Gripping mechanism for soft robotics applications

Background/Context for This Invention

There have been many attempts to modify the shape of the comb to reduce hair pullout pain, increase blood flow to the scalp, and provide easy hair removal from the brush. Current brush technologies rely on vertical spines that slip past snags and make it difficult to remove hair post-groom. There is a need for a flexible comb that will adapt to tangles in hair and allow for easy removal of hair from the comb.

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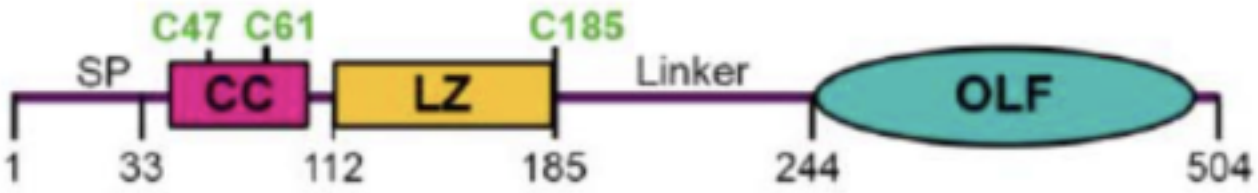
More Information

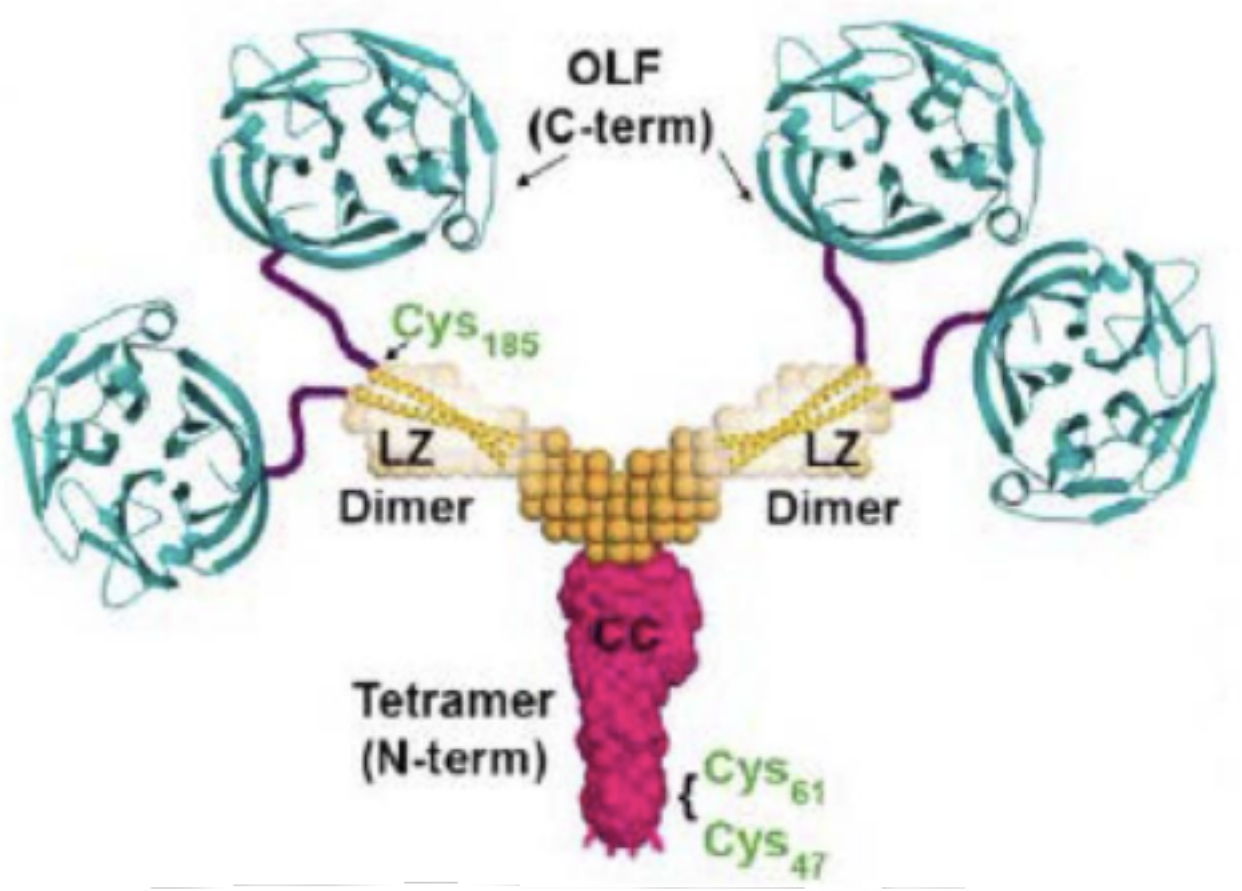
Publications

For more information about this technology, please visit:
https://licensing.research.gatech.edu/technology/hairbrush-inspired-cat-tongue-grooming-mechanics

Images:



The gene structure depicting the domains of myocilin, including signal peptide, location of key cysteine residues, and its coiled-coil, leucine zipper, and olfactomedin domains.



The myocilin quaternary structure based on solution X-ray scattering, X-ray crystallography, and chemical cross-linking experiments.