



# Newport Biotech Consultants

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## The Truth About Cats and Clones

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The road to an allergy-free cat is a rocky one. For a number of years research scientists and for-profit cat breeding operations have struggled with the Fel-D1 locus, a gene responsible for production of a highly allergenic glycoprotein (note the 3D image of Fel-D1 in Figure 1). Large and obstreperous, the Fel-D1 protein is produced in the saliva and sebaceous glands, so the cantankerous feline coats himself with it during his grooming absolutions. Included in this essay is a shot of our cat, Tigger, a veritable chalice of allergens.



Tigger, contemplating the meaning of cloning, with his muse.

Several firms have grappled with this issue. One of the early entrants was Genetic Savings and Clone, which claimed they could deliver a cloned cat for a mere 50 grand. While they never promised an allergy-free cat, if the cloning technology were easily available, a knockout cat could certainly have been in the offing. Apparently the work was not that far advanced, since even though the company apparently did produce some cloned cats, it went belly up a couple of years ago.

Allerca, a high tech cat breeding operation, has abandoned genetic engineering to focus on selectively breeding of cats that lack or have reduced levels of the Fel-D1 protein that triggers allergic reactions. SiberianCatBreeders.com also eschews the high tech approach, focusing on selective breeding.

Gomez and colleagues at the Audubon Center for Research of Endangered Species, New Orleans, Louisiana, produced at least one live-born kitten cloned from fetal fibroblasts. But the project involved the transfer of 291 embryos, so clearly there are many technical issues yet to be resolved. The team has been pursuing these investigations for a number of years, testimony to the difficulty of the challenge but also to the fact that it is solvable. Over the years despite the accusations of fraud and failure of many trials, animal cloning has proven successful for those with the patience and perspicacity to follow it to the end.

Fel-D1 is the major, but not the only player producing misery in its victims. Although the most potent of the allergens that cats produce, it is not the only one, and about 10% of cat allergy victims are allergic to other proteins that the animal harbors.

But Fel-D1 is particularly difficult to deal with, as it sticks to clothing, furniture, practically everything with which the cat comes in contact. So while either low tech selective breeding or high-tech cloning and knockout strategies are feasible scientifically, it's not clear if this would solve the problem for potential but allergic cat lovers.

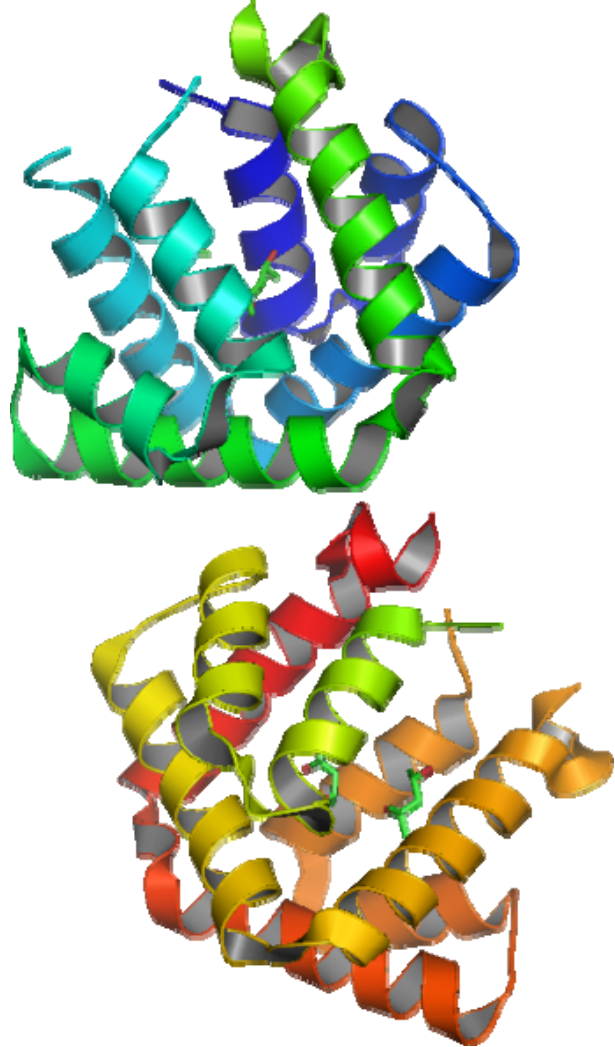


Figure 1. Two 3D rendered views of the Fel-D1 molecule.

Nonetheless, there is still seems to be a demand. Allerca reports a two-year backlog of orders, with US residents paying about \$4K. Siberian cats are bit less pricey, around \$2000. Lifestyle Pets offers “scientifically tested” hypoallergenic kittens, which go for about \$6K.

There are some mountains that science has yet to climb. These include the cure for cancer, reversal of the aging process, a unified field theory, fusion energy and a cat that allergy sufferers can live with. At this stage if you have really severe allergy problems when confronted with the object of your desire, you might be better off acquiring an iguana.

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