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# Ligand binding preferences of paLigand binding preferences of pathogenesis-related class 10 (pr-10) allergens

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**Rationale:** Many PR-10 proteins are allergens when inhaled or ingested. One proposed function of these proteins is delivering bio-active compounds to wounds and/or the developing plant. We examined ligand binding to seven known PR-10 allergens. Ligand binding could well affect IgE binding.

**Methods:** We generated pure, recombinant Ara h 8.01, Ara h 8.02, Cor a 1.02, Cor a 1.04, Que a 1.02, Que a 1.03 and Bet v 1.01 from peanut, hazelnut, white oak and birch respectively. 23 putative ligands were tested for binding using a fluorescence assay.

**Results:** All of the proteins bound apigenin, daidzein, genistein, quercetin and resveratrol. Que a 1.03 bound the widest array of ligands including several fatty acids. Preliminary structural studies show changes in protein structure with ligand binding.

**Conclusions:** Our results support the theory that these PR-10 allergens' function *in vivo* is as a delivery vehicle for bio-active compounds. Now that we have identified biologically-relevant ligands we will test the possibility that binding them to PR-10 proteins may influence allergenic potential.

## Biography

Barry K Hurlburt has received his PhD in Biochemistry from the University of Virginia and Postdoctoral studies at Stanford University. In 1990, he became an Assistant Professor at the University of Arkansas for Medical Sciences. In 2001, he moved to the USDA in New Orleans and is focused on peanut and tree nut allergies. He has published more than 50 papers in international journals and has received numerous extramural grants to support his research.

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