

# IMMUNOLOGY AND CANCER THERAPY

May 22-23, 2019 | Rome, Italy

Ashley S Plant et al., Immunol Case Rep 2019, Volume 3

## DEVELOPMENT OF A HEAT SHOCK PROTEIN (HSP) NEO-ANTIGEN VACCINE FOR THE TREATMENT OF DIFFUSE INTRINSIC PONTINE GLIOMA (DIPG)

**Ashley S Plant<sup>1,2</sup>, Uduman M<sup>3</sup>, Castle J<sup>3</sup>, Bruell J<sup>3</sup>, Taylor T<sup>2</sup>, Filbin M<sup>4</sup>, Kieran M<sup>4</sup> and Chi S<sup>4</sup>**

<sup>1</sup>Children's Hospital Orange County, USA

<sup>2</sup>University of California, USA

<sup>3</sup>Agenus Biotechnologies, USA

<sup>4</sup>Dana-Farber Cancer Institute, USA

**D**iffuse intrinsic pontine glioma (DIPG) is a rare and devastating type of brainstem glioma in children which has <1% five year overall survival. Recent molecular studies have shown 80% of these tumors harbor either a histone 3.3 or histone 3.1 K27M mutation. These histone mutations occur predictably with other secondary genetic aberrations including K27M H3.3 with PDGFRA amplifications and K27M H3.1 with ACVR1 mutations. Using NetMHCpan 4.0 and NetMHCpan 3.2 binding algorithms and predictions of immunogenicity, author has identified five shared 27-mer sequences for inclusion in a heat shock neo-antigen vaccine for the treatment of DIPG. Prediction algorithms suggest sequences will cover 96.5% of the class I MHC molecules and 83.9% of the class II MHC molecules in the North American population resulting in 99.5% combined class I and II coverage in the population. The phase I clinical trial for pediatric DIPG is now underway.

## BIOGRAPHY

Ashley S Plant is Director of Neuro-Oncology at Children's Hospital Orange County (CHOC) and Associate Professor of Pediatrics at University of California, Irvine, USA. She completed her medical training at Stanford University School of Medicine and her Pediatric residency training at University of California, Los Angeles, USA. She completed her hematology/oncology fellowship at Boston Children's/Dana Farber Cancer Institute in Boston and remained on as a clinical instructor at Harvard Medical School and Neuro-Oncology attending at Dana Farber before becoming Director of Neuro-Oncology at CHOC. Her previous research was under Dr. Glenn Dranoff and Dr. Jerome Ritz in the area of immuno-oncology and her current research focus is in understanding the immunophenotype of pediatric brain tumors and how to extrapolate this information into future early immunotherapy trials for children.

[aplant@choc.org](mailto:aplant@choc.org)