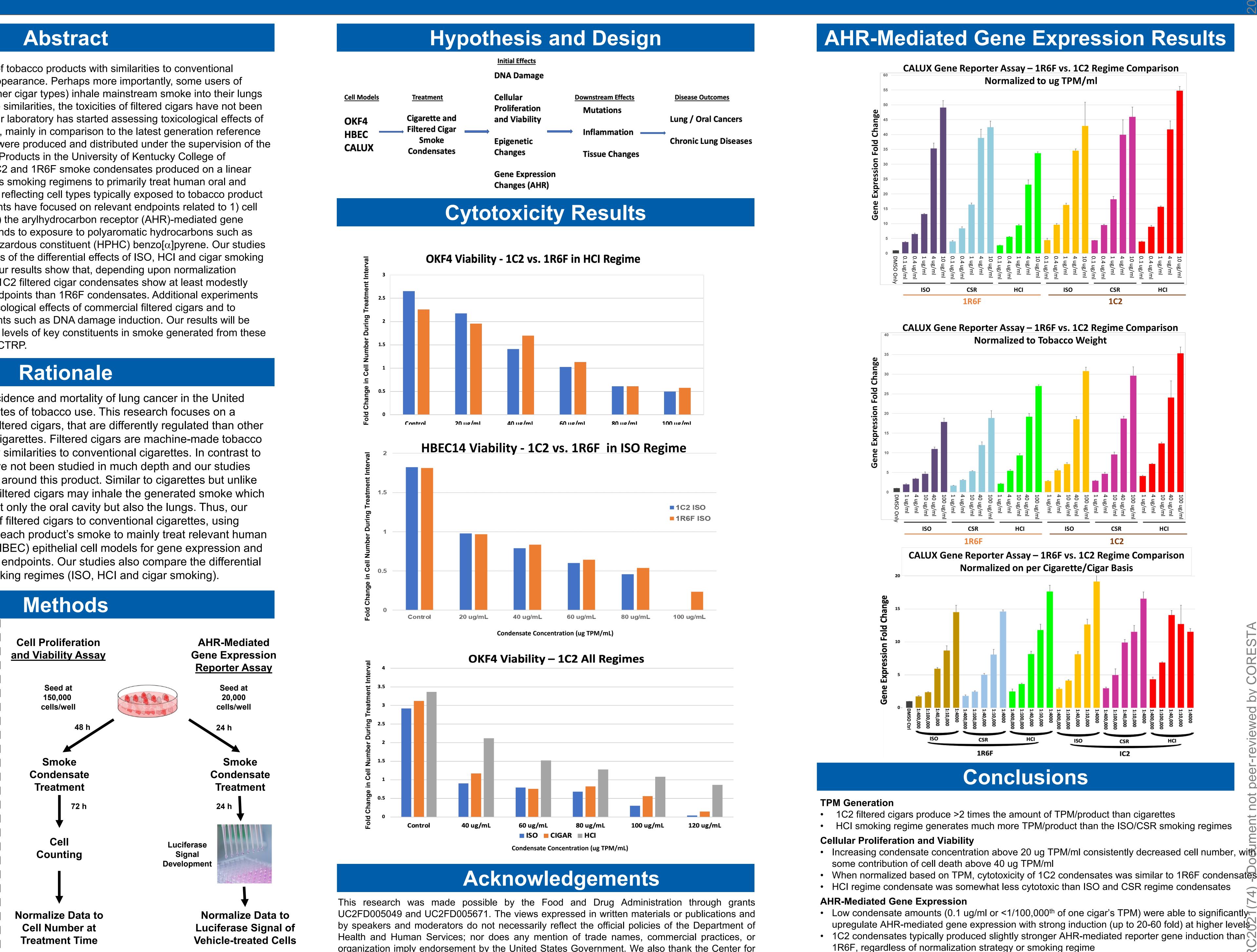


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Filtered cigars are a category of tobacco products with similarities to conventional cigarettes, including general appearance. Perhaps more importantly, some users of filtered cigars (in contrast to other cigar types) inhale mainstream smoke into their lungs as for cigarettes. Despite these similarities, the toxicities of filtered cigars have not been investigated in much depth. Our laboratory has started assessing toxicological effects of the reference filtered cigar, 1C2, mainly in comparison to the latest generation reference cigarette, 1R6F, both of which were produced and distributed under the supervision of the Center for Tobacco Reference Products in the University of Kentucky College of Agriculture. Our studies use 1C2 and 1R6F smoke condensates produced on a linear smoking machine under various smoking regimens to primarily treat human oral and bronchial epithelial cell models reflecting cell types typically exposed to tobacco product smoke. Thus far, our experiments have focused on relevant endpoints related to 1) cell proliferation and viability and 2) the arylhydrocarbon receptor (AHR)-mediated gene expression pathway that responds to exposure to polyaromatic hydrocarbons such as the hazardous or potentially hazardous constituent (HPHC) benzo[α]pyrene. Our studies also have included comparisons of the differential effects of ISO, HCI and cigar smoking regimes on these endpoints. Our results show that, depending upon normalization strategy used for comparison, 1C2 filtered cigar condensates show at least modestly increased effects on certain endpoints than 1R6F condensates. Additional experiments are ongoing to assess the toxicological effects of commercial filtered cigars and to examine other relevant endpoints such as DNA damage induction. Our results will be interpreted in coordination with levels of key constituents in smoke generated from these products, as measured by the CTRP.

Kentucky has the highest incidence and mortality of lung cancer in the United States, mainly due to high rates of tobacco use. This research focuses on a particular tobacco product, filtered cigars, that are differently regulated than other tobacco products including cigarettes. Filtered cigars are machine-made tobacco products that are have many similarities to conventional cigarettes. In contrast to cigarettes, filtered cigars have not been studied in much depth and our studies aim to fill in knowledge gaps around this product. Similar to cigarettes but unlike other cigars, some users of filtered cigars may inhale the generated smoke which can thus potentially affect not only the oral cavity but also the lungs. Thus, our research compares effects of filtered cigars to conventional cigarettes, using condensates produced from each product's smoke to mainly treat relevant human oral (OKF4) and bronchial (HBEC) epithelial cell models for gene expression and cell proliferation and viability endpoints. Our studies also compare the differential effects of three different smoking regimes (ISO, HCI and cigar smoking).



Smoke Condensate **Preparations**

	puff duration	puff period	puff volume
	S	S	ml
ISO	2	60	35
HCI	2	30	55
CSR	1.5	40	20

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Tobacco	Filler	Smoking	ТРМ
Product	Weight (g)	Regime	(mg/rod)
1R6F	0.625	ISO	10.60
reference cigarette		CSR	7.96
ligarette		HCI	45.43
1C2	1.039	ISO	28.70
reference filtered		CSR	22.08
cigar		НСІ	71.83

Biological and Toxicological Properties of Filtered Cigars

organization imply endorsement by the United States Government. We also thank the Center for Tobacco Research Products in the UK College of Agriculture for providing reference products and generating smoke condensates.

• Among the smoking regimes, HCI condensates consistently induced the strongest response • Gene expression decreases at higher levels may be due to lower cell proliferation during treatment

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