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Relationship between the hepatic SULT2A1 protein expression and subcutaneous fat androstenone level in pigs of three breeds

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Conclusions

It is suggested that breed-specific expression of SULT2A1, an enzyme catalyzing conjugative stage of hepatic androstenone metabolism, is one of the factors determining breed-differences in androstenone accumulation.

Introduction

- Excessive accumulation of androstenone in pig adipose tissue contributes to boar taint.
- One of the reasons for high androstenone accumulation is a low rate of androstenone metabolism in pig liver.
- The main enzymes involved in the hepatic androstenone metabolism are 3β-hydroxysteroid dehydrogenase (3β-HSD) and hydroxysteroid sulfotransferase (SULT2A1).
- It has been previously suggested that the mechanisms regulating androstenone metabolism are breed specific but the nature of the breed-specificity is not well understood and the previous studies mainly focused on 3β-HSD.

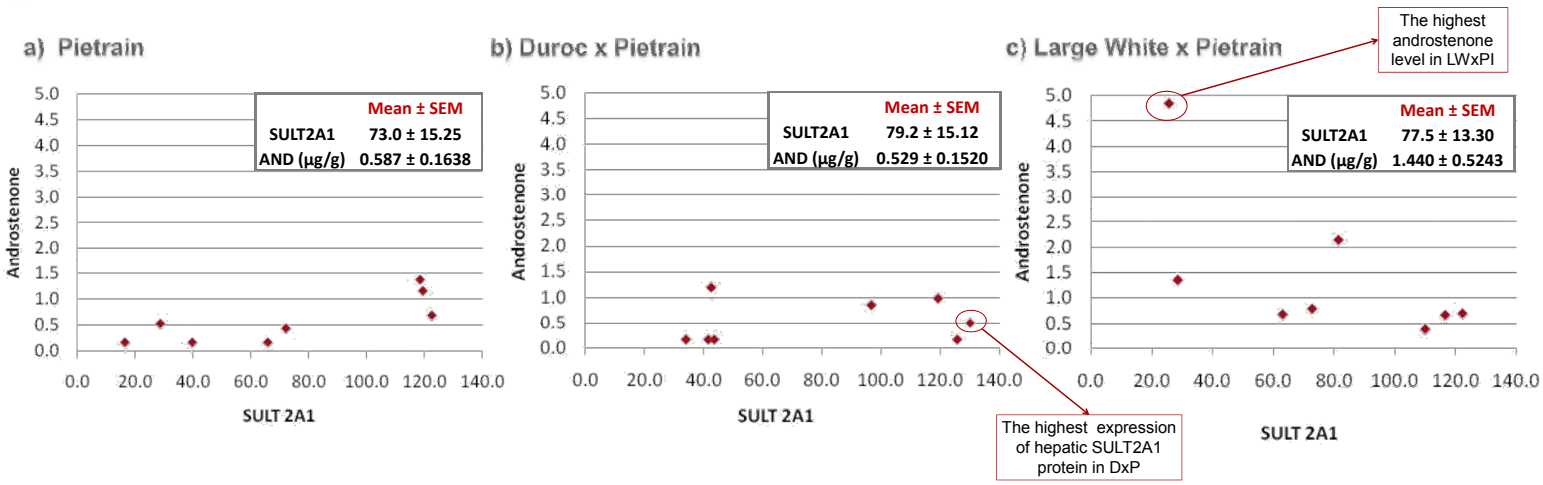
Materials and Methods

- SULT2A1 protein expression was analyzed by Western blotting in isolated cytosol.
- Androstenone content was determined by high resolution gas chromatography.

The aim of this study was to investigate the relationship between the hepatic SULT2A1 protein expression and subcutaneous adipose tissue androstenone level in three genetically diverse breeds: Pietrain (P), Duroc x Pietrain (DxP) and Large White x Pietrain (LWxP).

Results

1 Relationship between expression of hepatic SULT2A1 protein and subcutaneous adipose tissue androstenone



2 Pearsons' correlation between expression of hepatic SULT2A1 protein and subcutaneous adipose tissue androstenone

		Correlations SULT2A1 vs [AND]	
	n	Pearson correlation	Sig (2-tailed)
P	8	0.7900	0.0197
DxP	8	0.1862	0.6589
LWxP	8	-0.6493	0.0815