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# Transgenic Sheep

Produced for the CRC for Premium Quality Wool undergraduate program by;  
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# Selected examples of domestic animal applications

- Introduction of a cysteine biosynthetic pathway to sheep
- Production of a plant chitinase in sheep to prevent blowfly strike
- Prevention of pigmented wool
- Modification to milk production
- Alteration to the proteins of wool

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# Introduction of a cysteine biosynthetic pathway

- Cysteine limits wool growth
- Sheep have lost the pathway for cysteine synthesis
- The pathway has been isolated from bacteria
- Mice with the new pathway can produce cysteine
- Now needs to be shown in sheep

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# Production of a plant chitinase in sheep

- Blowfly strike causes much damage to sheep
- Normally controlled by chemical insecticides
- Plant chitinases can control fly larvae
- Aim is to transfer a plant gene for chitinase to sheep

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# Prevention of pigmented wool

- Pigmented fibres contaminating white wool downgrade the fleece
- Pigment production requires the activity of the enzyme tyrosinase
- Aim is to reduce tyrosinase activity by the use of anti-sense genes directed against tyrosinase mRNA

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