This Week in Science

A Family of Larks

Familial advanced sleep phase syndrome is inherited autosomally. These individuals have unusual sleep cycles and wake up abnormally early each morning. In one such family this characteristic is due to a single nucleotide mutation in the human Period2 gene; this blocks phosphorylation by casein kinase Iε. In a satisfying parallel with studies in animals, a deficit in such phosphorylation shortens the animal's circadian period, due to altered function of per in the molecular feedback loops that make up the circadian clock. This striking effect of a genetic polymorphism on human behavior paves the way to understanding the basis of human variation in daily rhythms.

02/09/01
Molecular Networks Composing Animal Clocks

Dr. Michael Young, Rockefeller (KITP Bio Networks 3/24/03)
Molecular Networks Composing Animal Clocks

A Gain of Function Screen for Aberrant Circadian Behavior

Dr. Michael Young, Rockefeller (KITP Bio Networks 3/24/03)
Molecular Networks Composing Animal Clocks
Molecular Networks Composing Animal Clocks

Dr. Michael Young, Rockefeller (KITP Bio Networks 3/24/03)
Molecular Networks Composing Animal Clocks

Dr. Michael Young, Rockefeller (KITP Bio Networks 3/24/03)
Molecular Networks Composing Animal Clocks

### Molecular Networks Composing Animal Clocks

#### Lipid Metabolism
- Phospholipase A2: CG1583, ZT7
- ATP-citrate (pro-S)-lyase: ATPCL, ZT10
- Alkylglycerol-phosphate synthase: CG10253, ZT12
- Myo-inositol-1-phosphate synthase: Inos, ZT13
- Long-chain-fatty-acid-CoA-ligase: BcDNA:GH02901, ZT21

#### Carbohydrate Metabolism
- Fructose-bisphosphatase: CG10611, ZT0
- Glucose-6-phosphate 1-dehydrogenase: Zw, ZT11
- Heparan sulfate 6-O-sulfotransferase: Hs6st, ZT10
- Glucan 1,4-alpha-glucosidase: BcDNA:GH02712, ZT20
- Beta glucosidase like: CG9701, ZT23

#### Glycoprotein biosynthesis
- Mannosyl transferase: CG12311, ZT14
- Mannosyltransferase-like: EG:34F3.7, ZT14

#### Oxidoreductases
- Oxidoreductase: Pdh, ZT3
- 3-hydroxyisobutyrate dehydrogenase: CG15093, ZT3
- Sepiapterin reductase: CG12116, ZT3