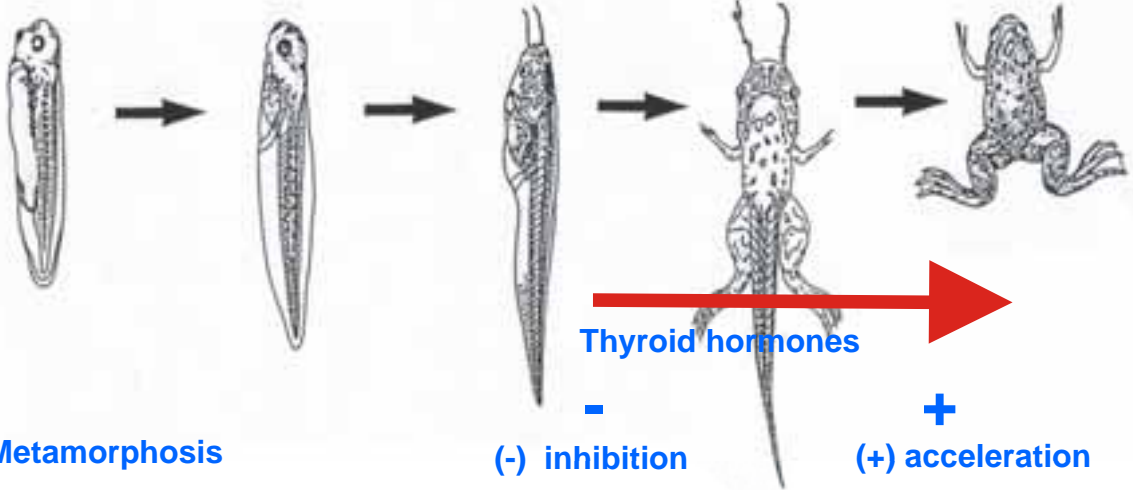
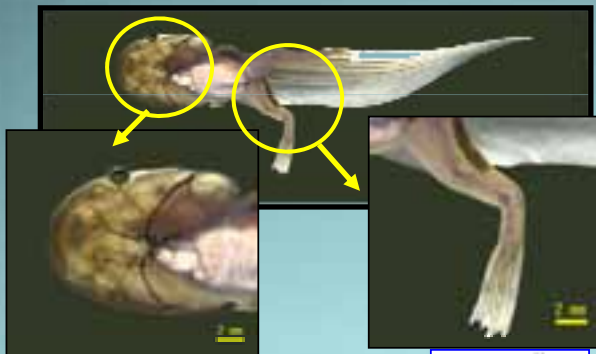


Development of *Xenopus*

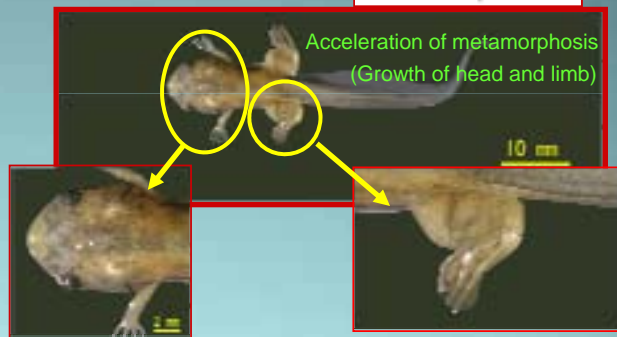
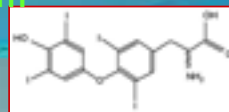


Morphological changes with disruption to the thyroid system

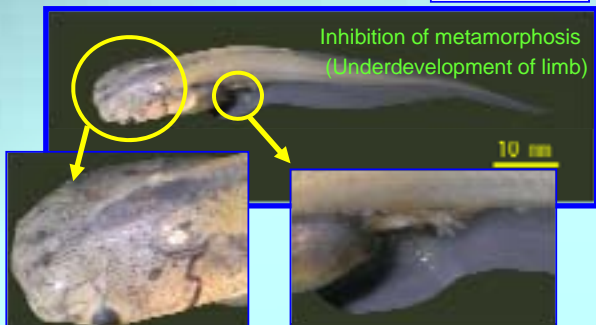
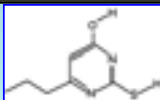
Control



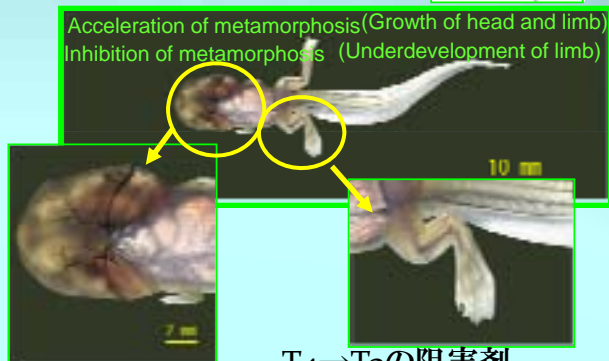
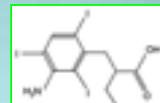
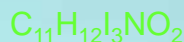
T4



PTU



IOP

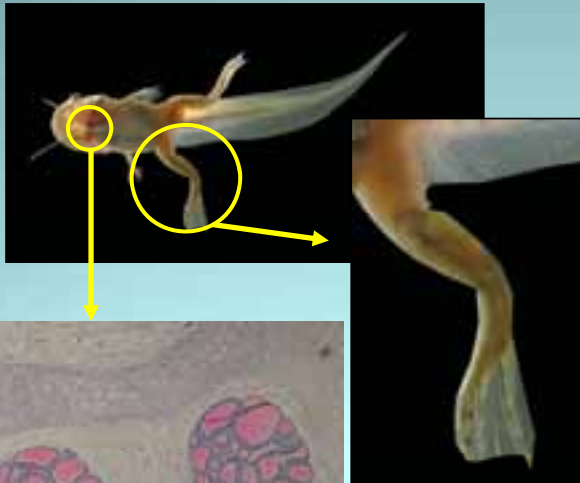


ホルモン合成阻害剤

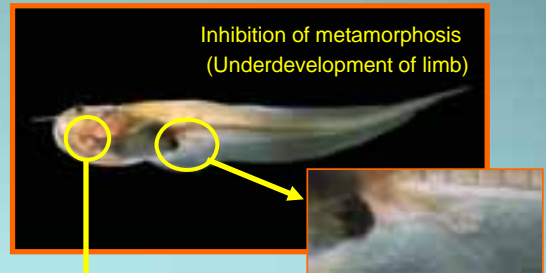
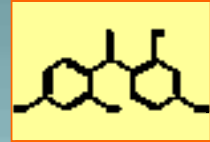
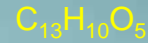
T₄→T₃の阻害剤

Results of Metamorphosis Assay (Phase 3)

Control



BP-2



Inhibition of metamorphosis
(Underdevelopment of limb)



Hypertrophy of thyroid gland

甲状腺ホルモン合成酵素の阻害剤

About a gene identified by a gene expression profile, acquired the individual genetic information such as sequence and the gene function from database and classified it in known gene or unknown gene.

Venn diagram illustrating the overlap of Hind limb, Liver, and Tail. The counts are as follows:

- Hind limb only: 33
- Liver only: 20
- Tail only: 10
- Hind limb & Liver: 3
- Hind limb & Tail: 2
- Liver & Tail: 2
- All three: 1

A diagram of a fish with labels for its internal and external features. The labels are: Liver (pointing to an orange organ), Hind limb (pointing to a white, fin-like structure), and Tail (pointing to the posterior end of the fish). A red double-headed arrow indicates the length of the fish's body.

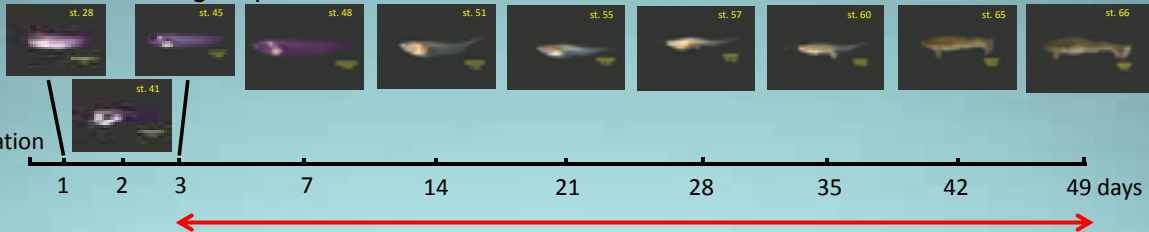
胎前胎後の相違	Genes	発生における 発現組織の相違	機能分類	46例に關する 文獻		胎前胎後の高い発現子 ら文獻				
				胎前	胎後	胎前	胎後	胎前	胎後	
Heart muscle	actn, alpha, cardiac muscle (<i>Bovine (Nemaster)</i>)	1	+	1						
	MyHC (myosin heavy chain) (<i>Cyprinus pyrrhus</i>)	1	+	1						
	myosin light chain, fast skeletal muscle (<i>Xenopus laevis</i>)	1	+	1						
	myosin II	1	+	1						
	myosin II (fast myosin)	1	+	1						
	titin (<i>Drosophila</i>)	1	+	1						
	troponin I, cardiac fast 2	1	+	1						
	<i>Xenopus laevis</i> , myosin light chain (MLC1)	1	+	1						
	activated protein kinase C receptor (RACK) (<i>Xenopus laevis</i>)	1	+	1						
	capase 8, cytosolic proteinase	1	+	1						
	mitochondrial 12S rRNA, 58S rRNA, 16S ribosomal RNA gene	1	+	1						
	unknown 15 (EST/NH)	1	+	1						
	unknown 16 (EST/NH)	1	+	1						
	unknown 18 (EST/NH)	1	+	1						
	unknown 20 (EST/NH)	1	+	1						
	unknown 24 (EST/NH)	1	+	1						
	unknown 25 (EST/NH)	1	+	1						
	unknown 26 (EST/NH)	1	+	1						
	unknown 27 (EST/NH)	1	+	1						
	unknown 28 (EST/NH)	1	+	1						
	unknown 29 (EST/NH)	1	+	1						
	thymopentin	1	+	1						
	Unknown (蛋白質類)	1	+	1						
	thymopentin	1	+	1						
	RNA-binding protein (TPA) (<i>Mus musculus</i>)	1	+	1						
	calnexin	1	+	1						
	unknown 10 (EST/NH)	1	+	1						
	unknown 22 (EST/NH)	1	+	1						
	poly(2'-5') triphosphate (<i>Drosophila melanogaster</i>)	1	+	1						
	betaine-homocysteine methyltransferase (<i>Nemaster</i>)	1	+	1						
	unknown 23	1	+	1						
	thymidine kinase 1	1	+	1						
	proliferating cell nuclear antigen (PCNA) for pRb-binding protein, RPA family 1 (<i>Xenopus laevis</i>)	1	+	1						
	hormone like 42	1	+	1						
	Unknown (蛋白質類)	1	+	1						
	similar to CRYSTALIN A1 (<i>Xenopus laevis</i>)	1	+	1						
DEAD-box protein p72 (P72) (human)	1	+	1							
Unknown (蛋白質類)	1	+	1							
Liver	hematopoietic myosin II heavy chain A (<i>Xenopus laevis</i>)	1	+	1						
	ATPase, H ⁺ -transporting, V0 subunit B	1	+	1						
	thymidine kinase 1	1	+	1						
	serine (cysteine) proteinase inhibitor, clade C, member 1 (<i>Xenopus laevis</i>)	1	+	1						
	mitochondrial 16S rRNA	1	+	1						
	mitochondrial 18S rRNA	1	+	1						
	MTF1 domain containing 1	1	+	1						
	OCAT-anchored binding protein delta (<i>Xenopus laevis</i>) / (CBP) plus finger transcription factor delta (thal gene) (SNAG)	1	+	1						
	eukaryotic translation elongation factor 2	1	+	1						
	unknown 12 (EST/NH)	1	+	1						
	Unknown (蛋白質類)	1	+	1						
	Unknown (蛋白質類)	1	+	1						
	HMG-CoA reductase mRNA (<i>Xenopus laevis</i>)	1	+	1						
	unknown 10	1	+	1						
	unknown 8 (EST/NH)	1	+	1						
	serine for cysteine) proteinase inhibitor, clade A (alpha-1) member 1	1	+	1						
	unknown 11 (EST/NH)	1	+	1						
	unknown 14	1	+	1						
	ribosomal protein S15	1	+	1						
	unknown 13 (EST/NH)	1	+	1						
	similar to cholesteryl receptor 1 (<i>Xenopus laevis</i>)	1	+	1						
	unknown 9 (EST/NH)	1	+	1						
	unknown 12	1	+	1						
	betaine-homocysteine methyltransferase (<i>Nemaster</i>)	1	+	1						
	titin (<i>Nemaster</i>)	1	+	1						
	mitochondrial 16S rRNA, 58S rRNA, 16S, 18S, NADH dehydrogenase 1	1	+	1						
	eukaryotic translation elongation factor 2	1	+	1						
	unknown 2 (EST/NH)	1	+	1						
	14-3-3	1	+	1						
	Myosin receptor interaction 12 (<i>Mus musculus</i>)	1	+	1						
	unknown 1 (EST/NH)	1	+	1						
	betaine-homocysteine methyltransferase (<i>Nemaster</i>)	1	+	1						
	similar to CRYSTALIN A1 (<i>Xenopus laevis</i>)	1	+	1						
	unknown 1.171 (<i>Xenopus laevis</i>)	1	+	1						
	unknown 4 (MG2) (<i>Xenopus laevis</i>)	1	+	1						
	unknown 5 (EST/NH)	1	+	1						
unknown 6 (EST/NH)	1	+	1							
translocated promoter region (<i>Xenopus laevis</i>)	1	+	1							
transmembrane bound G2 alpha crystallin (<i>Xenopus laevis</i>)	1	+	1							

- a ニシツメガエルで同定されている遺伝子
- b アフリカツメガエル他、カエルで同定されている遺伝子
- c カエルでは同定されていない遺伝子
- d ニシツメガエルのESTデータベースが存在する遺伝子
- e アフリカツメガエルのESTデータベースには存在する遺伝子
- f 相関性の高いデータベースが存在しない遺伝子

Summary of gene expression by T4

EE2 exposure to *X. tropicalis*

Feeding tadpole

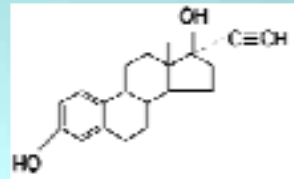


1 nM EE2 (17 α -Ethinylestradiol) in water

CAS No : 57-63-6

Formula : C₂₀H₂₄O₂

MW : 296.4



Tadpoles were reared according to the metamorphosis assay in OECD

Test design

Strain		Nigerian
Study start		Stage 44/ 46
Study end		Stage 66 (completion of metamorphosis)
EE2 concentration		1 nM — Induction of 100% sex-reversed ZZ♂ <i>X. laevis</i> by E2 — Vtg synthesis in cultured hepatic cells of <i>X. laevis</i> E2 \rightleftharpoons EE2
Exposure regime		Flow-through design with 25 mL/min
Endpoint		Developmental stage, whole body length, snout vent length, hind limb length, wet weight, histology of gonad, and VTG induction
Determination days		Day 2, day3 and every 7 days
Larval density		Mainly 20 tadpoles per tank
Volume of test medium		4 L
Test medium		Tap water dechlorinated with activated carbon
Feeding	Food	Sera micron (powdered fishery food)
	Frequency/amount	At least twice a day, quantity adjusted with age of tadpoles
Lighting		12 h light : 12 h dark
Water temperature		25±1°C
pH of breeding water		6.5-8.0
Dissolved oxygen concentration		Above 40% of the air saturation value
Chemistry supplementation		Once a week

Tadpoles were reared according to the phase 2 method used in metamorphosis assay established in OECD