Abstract

In *Drosophila*, the maternally localized gene *pumilio* is thought to act as a regulator of the posterior pattern in *Drosophila* embryo by binding to sites in the *hunchback* gene named Nanos Response Elements (NREs). Binding of pumilio to these sites represses the translation of the *hunchback* gene.

Recent work, at the University of Leeds, has identified a cDNA clone from the moss *Physcomitrella patens* cDNA library, that by sequence analysis showed to have strong homology with *Drosophila pumilio* gene. In this work, this cDNA clone (pPum 3a) was used as a probe to screen *Physcomitrella patens* genomic library constructed in bacteriophage vector λ-GEM 12(provided by Dr. M. Leech at John Innes Center). Southern blot has identified a fragment which was cloned at the Sst I site of the vector pBluescript SK+. The *ca.* 5.5kb genomic clone pGPum S2.2 , had homology with the 3'-region of the cDNA clone. Another similar work by Miss Irene Wier at the University of Leeds has identified another *ca.* 4 kb genomic clone (pGPums E461)(cloned at the Eco RI site of pBluescriptSK+) that has homology with both the 3'- region and 5'- region of the cDNA clone (pPum 3a). This clone was sequenced at this work.The first approach in sequencing was by creating nested deletions within the cloned ca. 4 kb fragment. Sequence and computer analysis of this clone suggest two readings to the protein coding region of the *Physcomitrella pumilio* gene and that the isolated clone might not be the whole *Physcomitrella Pumilio* gene. They also suggest that there could be a family of pumilio related genes within the moss *Physcomitrella patens*.

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ABBREVIATIONS

A	:	Adenine
Amp	:	Ampicillin
bp	:	base pairs
C	:	Cytosine
CCC	:	Covalent Closed Circular
cpm	:	counts per minute
ddNTP	:	2'-3' dideoxynucleoside triphosphate
DNA	:	deoxyribonucleic acid
cDNA	:	complementary DNA
dNTP	:	2'-deoxy nucleoside triphosphate
EDTA	:	ethylene dinitrilotetra acetic acid, sodium salt
EtBr	:	3,8,-diamino-5-ethyl-6-phenylphen-anthridium bromide (ethidium bromide)
G	:	Guanine
IPTG	:	Isopropyl-β-D-thiogalacto pyranoside
kb	:	kilo base pair
min.	:	minute
M_r	:	relative molecular mass
OD	:	Optical Density
O/N	:	Over night
RNA	:	ribonucleic acid
mRNA	:	messenger RNA
rpm	:	revolution per minute
SDS	:	sodium dodecyl sulphate
T	:	thymine
Tet	:	tetracycline
Tris	:	2-amino-2-(hydroxymethyl)-1,3-propanediol
UV	:	ultra violet
v/v	:	volume(ml) per volume(ml)
w/v	:	weight(g) per volume(ml)
X-gal	:	5-bromo-4-chloro-3-β-D-galactopyranoside
Δ	:	deletion

Amino Acids

C	Cys	Cysteine	
A	Ala	Alanine	
G	Gly	Glycine	
N	Asn	Aspargine	
S	Ser	Serine	
F	Phe	Phenylalanine	
P	Pro	Proline	
L	Leu	Leucine	
Q	Gln	Glutamine	
V	Val	Valine	
D	Asp	Aspartic Acid	Aspartate
E	Glu	Glutamic acid	Glutamine
I	Ile	Isoleucine	
W	Trp	Tryptophan	
R	Arg	Arginine	
M	Met	Methionine	
Y	Tyr	Tyrosine	
H	His	Histidine	
K	Lys	Lysine	
T	Thr	Threonine	