

**STRUCTURE - FUNCTION RELATIONSHIP OF LIPOXYGENASES -  
INTERACTION STUDIES**

A thesis submitted to the

**UNIVERSITY OF MYSORE**

For the Degree of

**DOCTOR OF PHILOSOPHY**

in

**BIOCHEMISTRY**

By

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**CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE**

Mysore - 570 013, INDIA

**AUGUST 1994**

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## DECLARATION

I hereby declare that this thesis on "**Structure- function relationship of lipoxygenases-interaction studies**" which is submitted for the degree of Doctor of Philosophy in Biochemistry to University of Mysore, is the result of the work done by me in the Protein Technology Department, Central Food Technological Research Institute, Mysore, under the guidance of **Dr. A.G.Appu Rao** during the period 1990 to 1994.

I further declare that the result of this work has not been submitted previously for any degree or fellowship.

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### CERTIFICATE

I hereby certify that the thesis on "**Structure-function relationship of lipoxygenases-interaction studies**" submitted by **Mr. S.Srinivasulu** for the degree of Doctor of Philosophy of the University of Mysore is the result of research work carried out by him at the Department of Protein Technology, Central Food Technological Research Institute, Mysore, under my guidance during the period 1990 to 1994.

A.G.APPU RAO

GUIDE AND RESEARCH SUPERVISOR

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**S.SRINIVASULU**

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## ABBREVIATIONS

LOX1	lipoxygenase I
rpm	revolutions per min
Fig	Figure
$s_{20w}$	sedimentation velocity coefficient at 20°C in water
PAGE	polyacrylamide gel electrophoresis
$\alpha$	alpha
$\beta$	beta
$k_r$	inactivation rate constant
°C	degree centigrade
MRW	mean residue weight
nm	nanometer
UV	ultraviolet
CD	circular dichroism
$T_m$	midpoint transition temperature
$C_m$	midpoint concentration of transition
cmc	critical micellar concentration
OD	optical density
$f_N$	fraction native
$K_{SV}$	Stern-Volmer constant
$E_{1\%}^{1\text{cm}}$ at 280 nm	absorbance of 1% protein solution at 280 nm using 1 cm pathlength cell
%	percentage
$K_m$	Michaelis-Menten constant
$V_{max}$	velocity maxima
$V/K$	the ratio of $V_{max}$ to $K_m$

DTT	dithiothreitol
kD	kilo dalton
$\mu$ g	microgram
mg	milligram
gr	gram
hr	hour(s)
min	minute(s)
sec	second(s)
DEAE	diethyl aminoethyl
NaOH	sodium hydroxide
CTAB	cetyl trimethyl ammonium bromide
SDS	sodium dodecyl sulphate
DOC	deoxycholic acid, sodium salt
DTNB	5,5' dithio-bis (2-nitro benzoic acid)
NBS	N-bromosuccinimide
GdmCl	guanidinium chloride

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