

# Generation of Distinct Molecular Species of the Bioactive Lipid Mediator Lysophosphatidic Acid by Autotaxin/Lysophospholipase D through Interaction with Platelet Integrins

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# Presenter Disclosure Information

- *Zachary Fulkerson*
- *Generation of Distinct Molecular Species of the Bioactive Lipid Mediator Lysophosphatidic Acid by Autotaxin/Lysophospholipase D through Interaction with Platelet Integrins*

FINANCIAL DISCLOSURE: none

UNLABELED/UNAPPROVED USES DISCLOSURE: none



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# Why LPA?



**Chemotaxis**

**Proliferation**

**Differentiation**

**Survival**

**Platelet Activation/  
Aggregation**

**SMC  
dedifferentiation**

**Endothelial  
migration  
permeability**

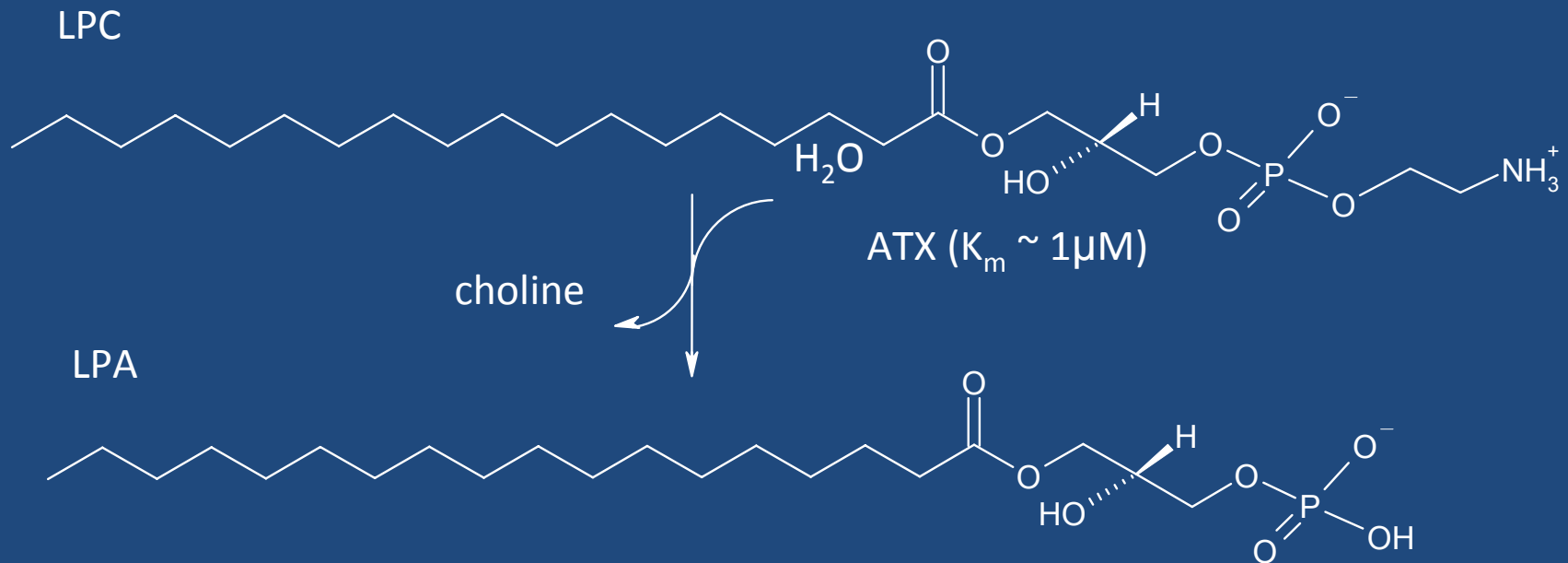
**Fibronectin Matrix  
Assembly**

**UK**

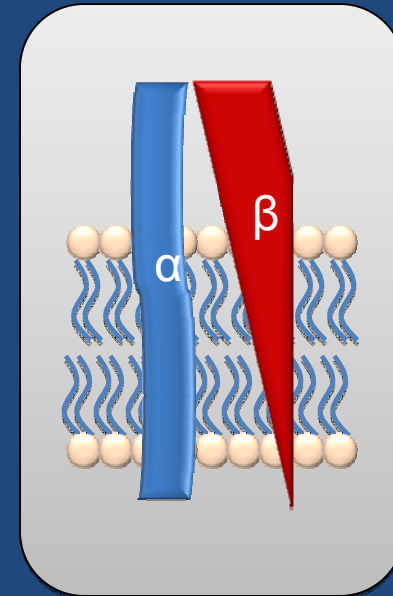
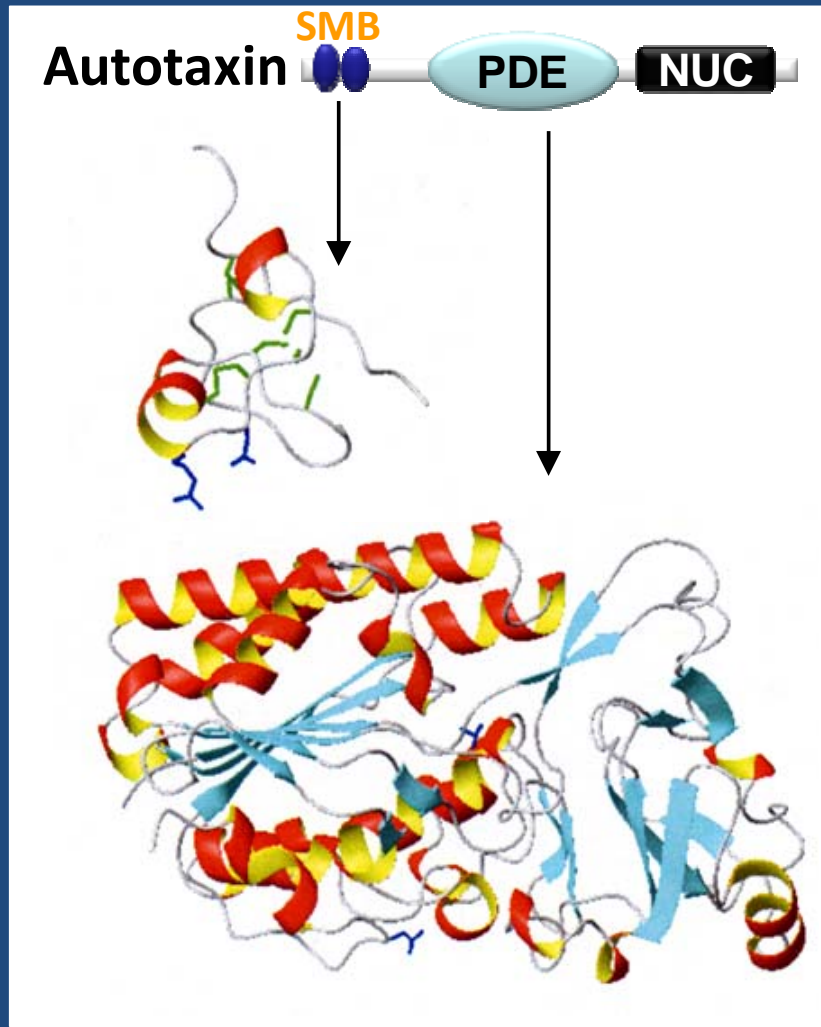
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# Why ATX?



# Why Integrins?



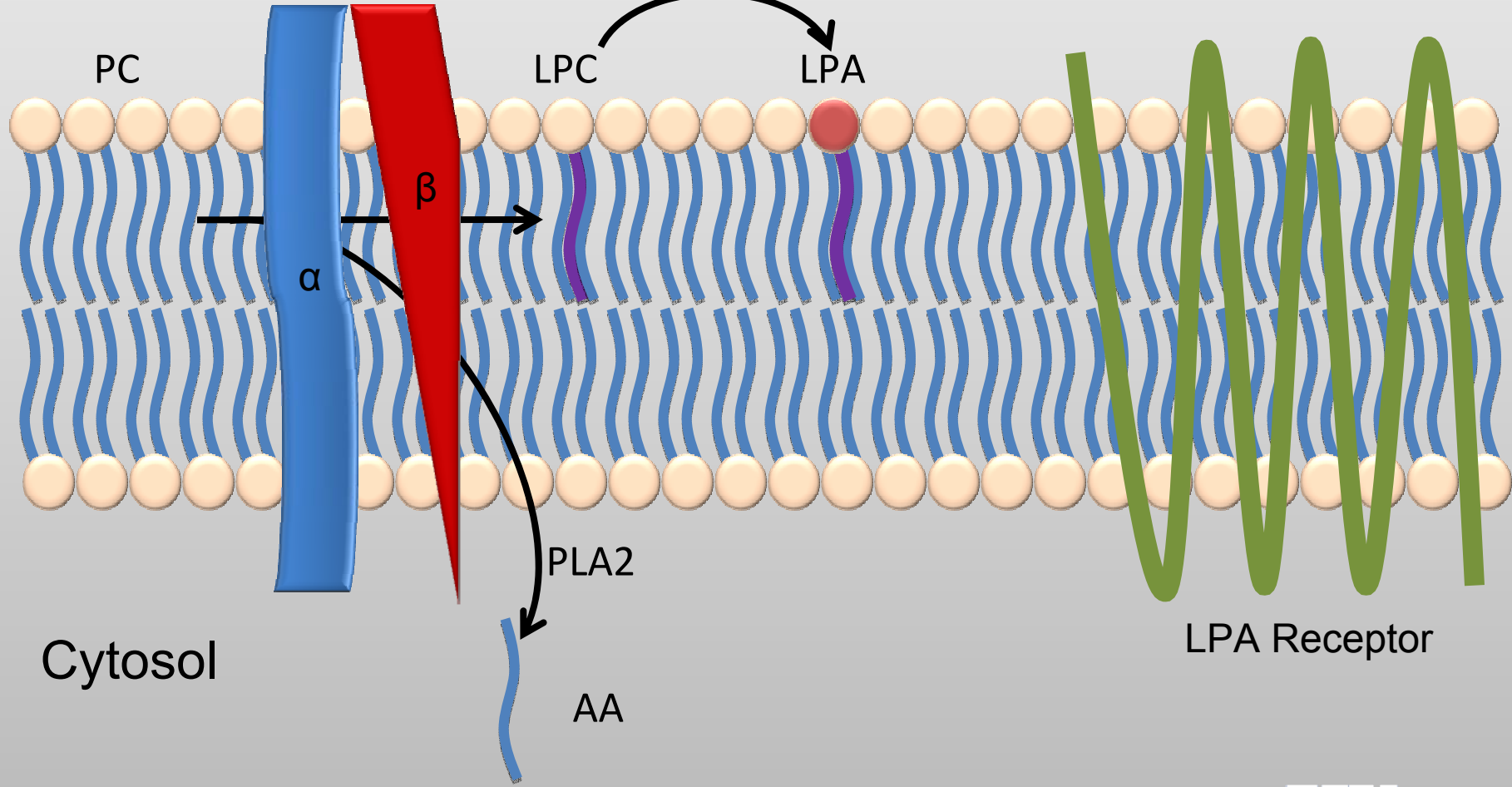
UK

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Extracellular

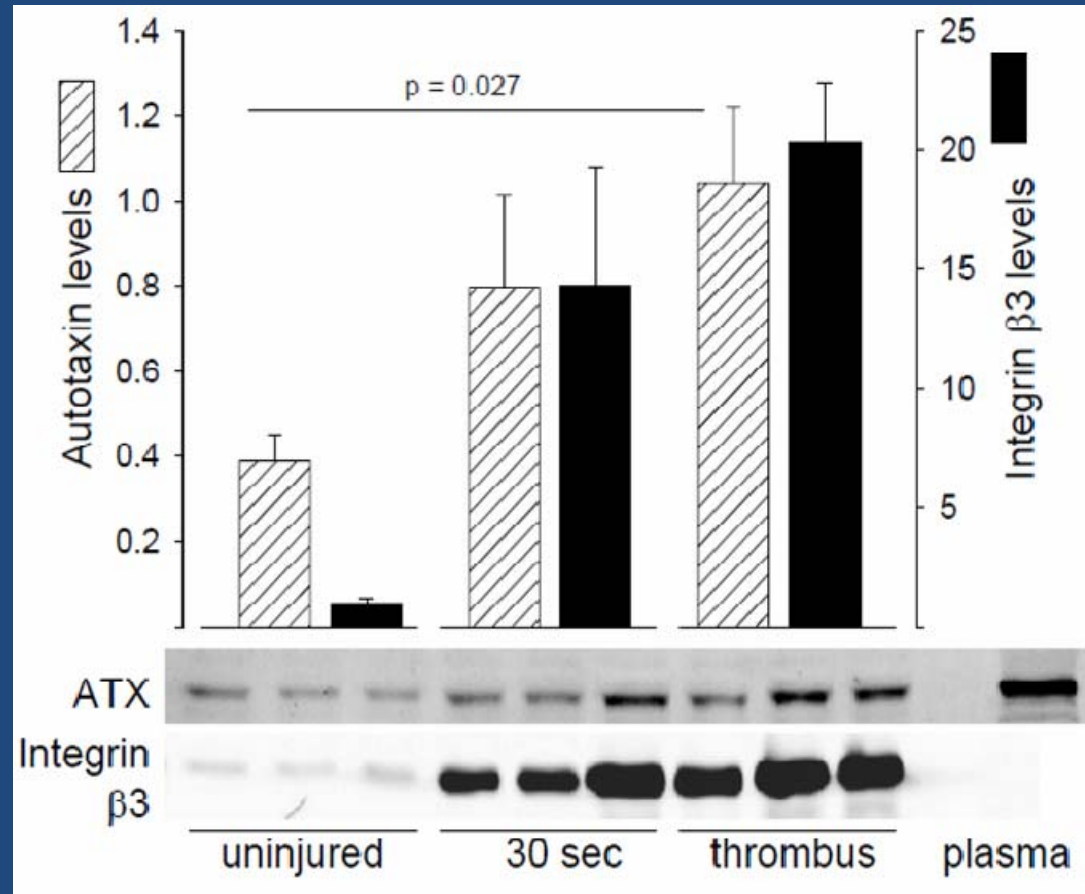
ATX



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# ATX Accumulates in Thrombi



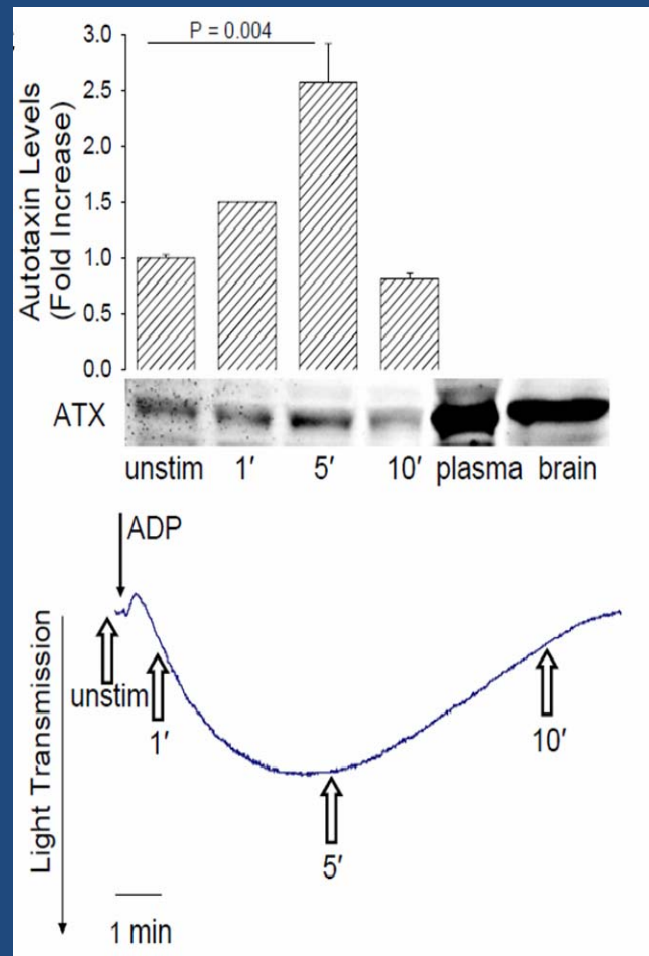
Pamuklar Z, et al. *J Biol Chem*. 2009. 284(11).

UK

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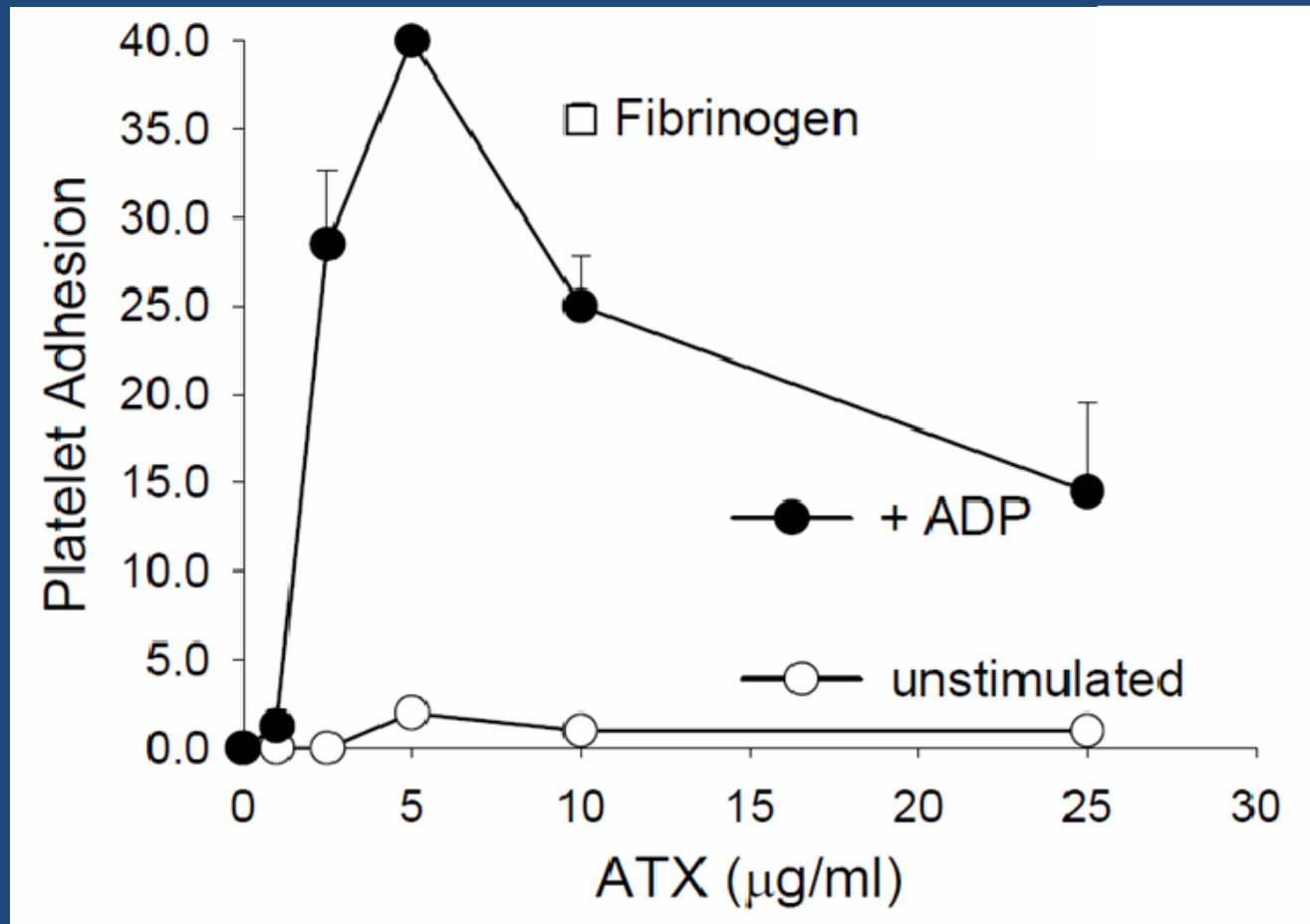
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# ATX Accumulates in Platelet Aggregation

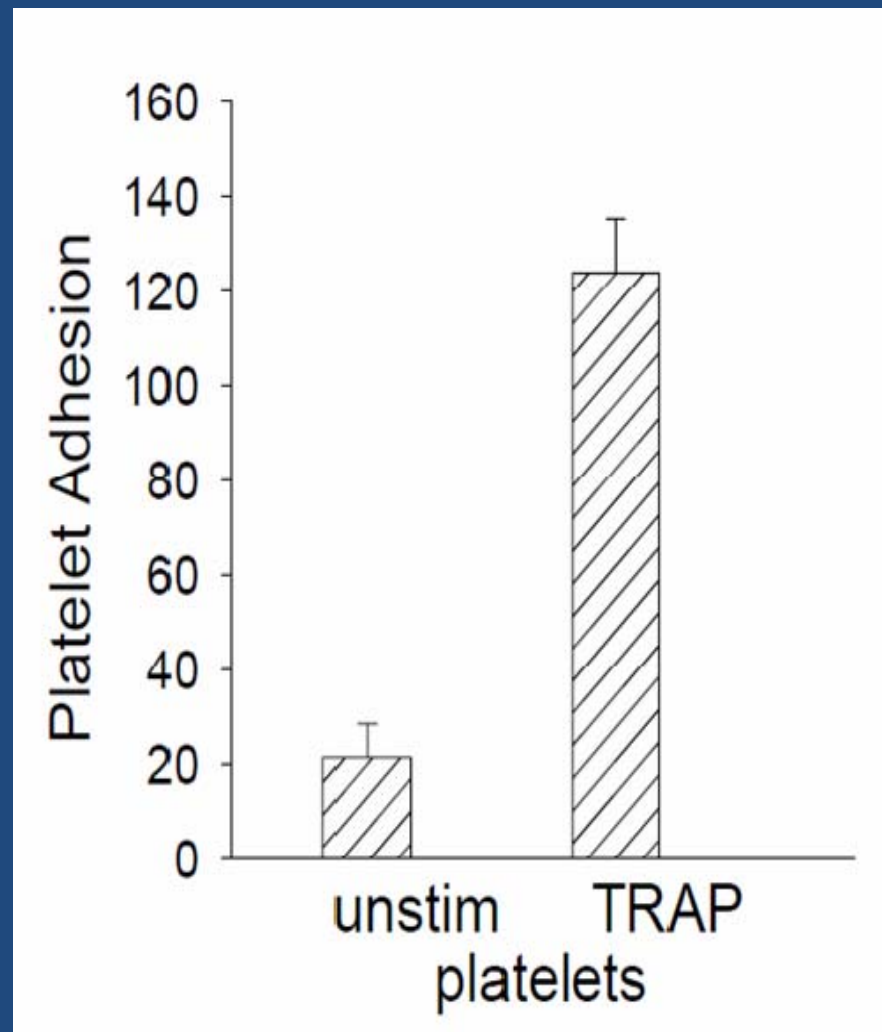


Pamuklar Z, et al. *J Biol Chem.* 2009. 284(11).

# Activated Platelets Adhere to ATX



# Activated Platelets Adhere to ATX



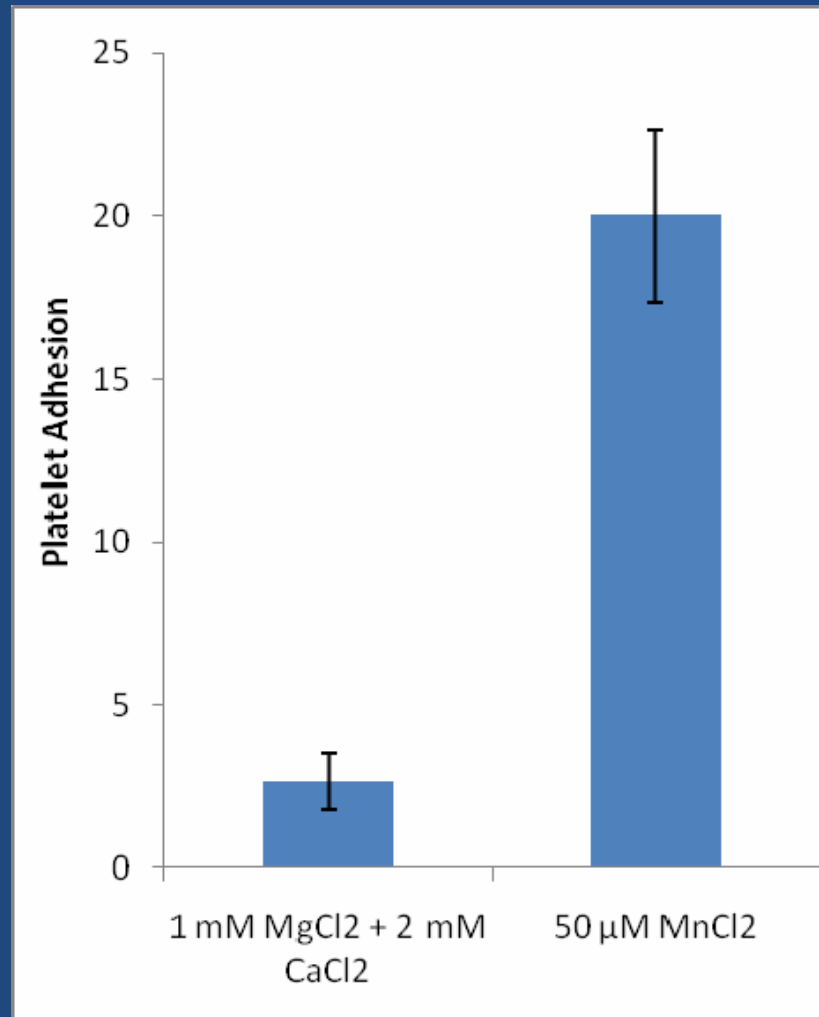
Pamuklar Z, et al. *J Biol Chem*. 2009. 284(11).



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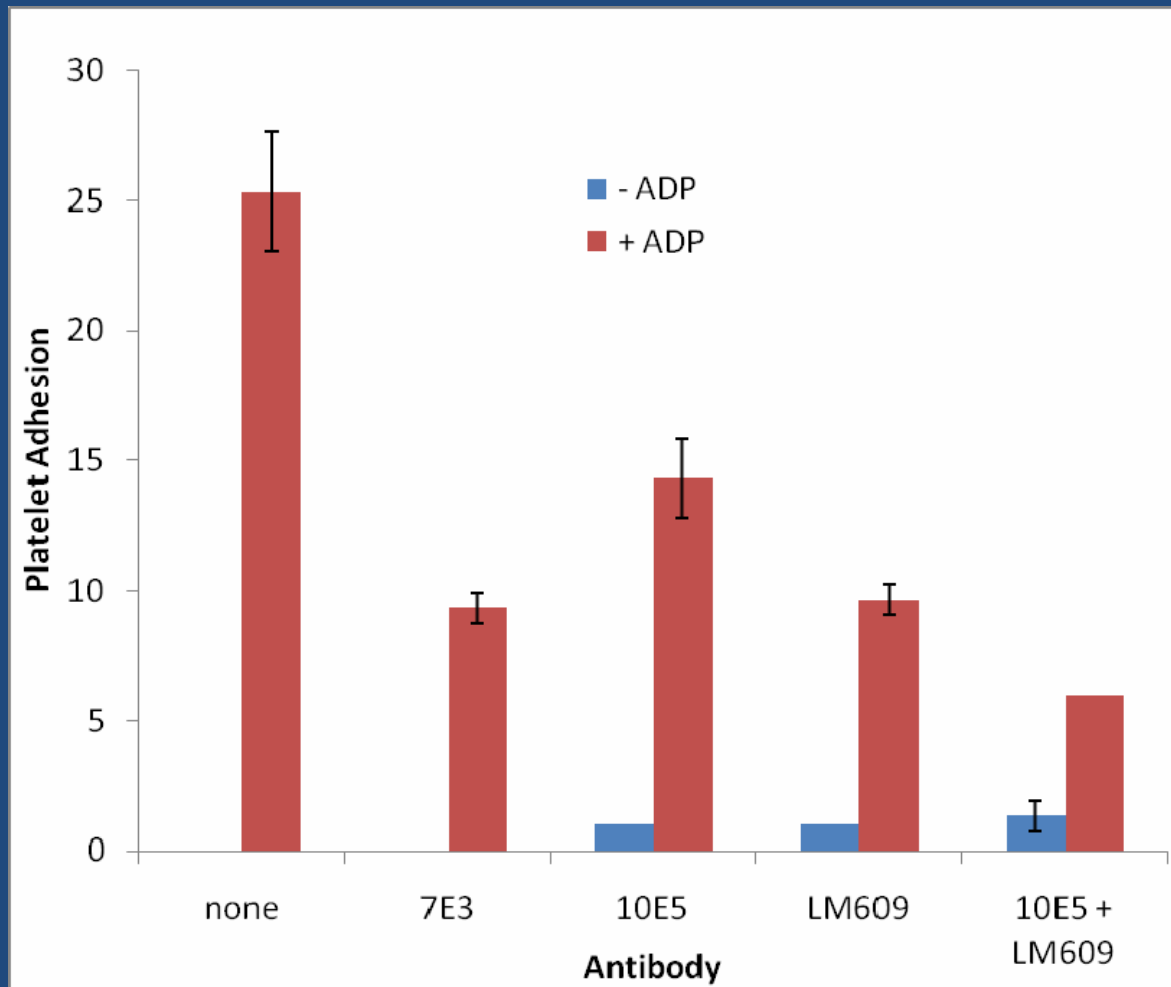
# Platelets with Activated Integrins Adhere to ATX



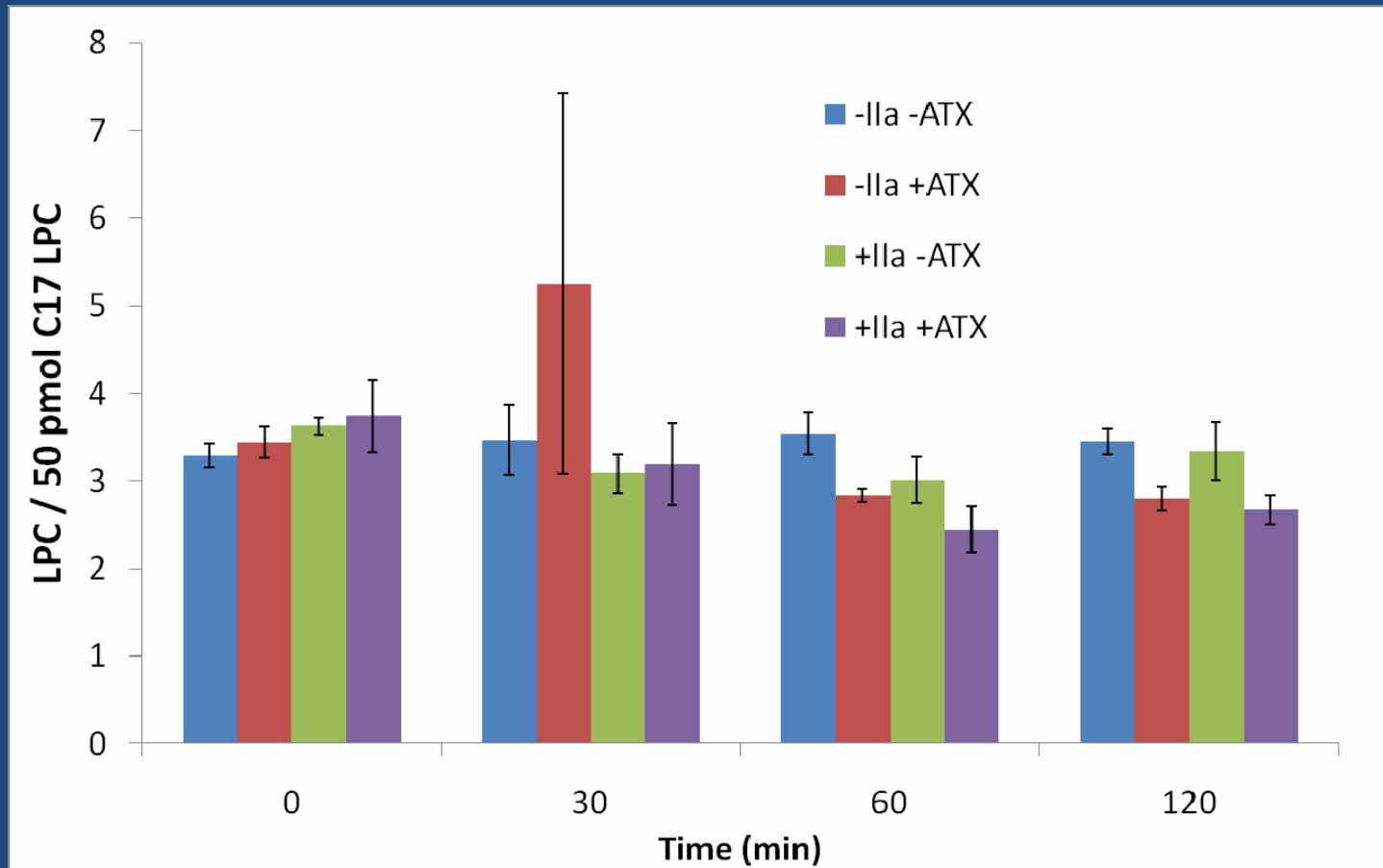
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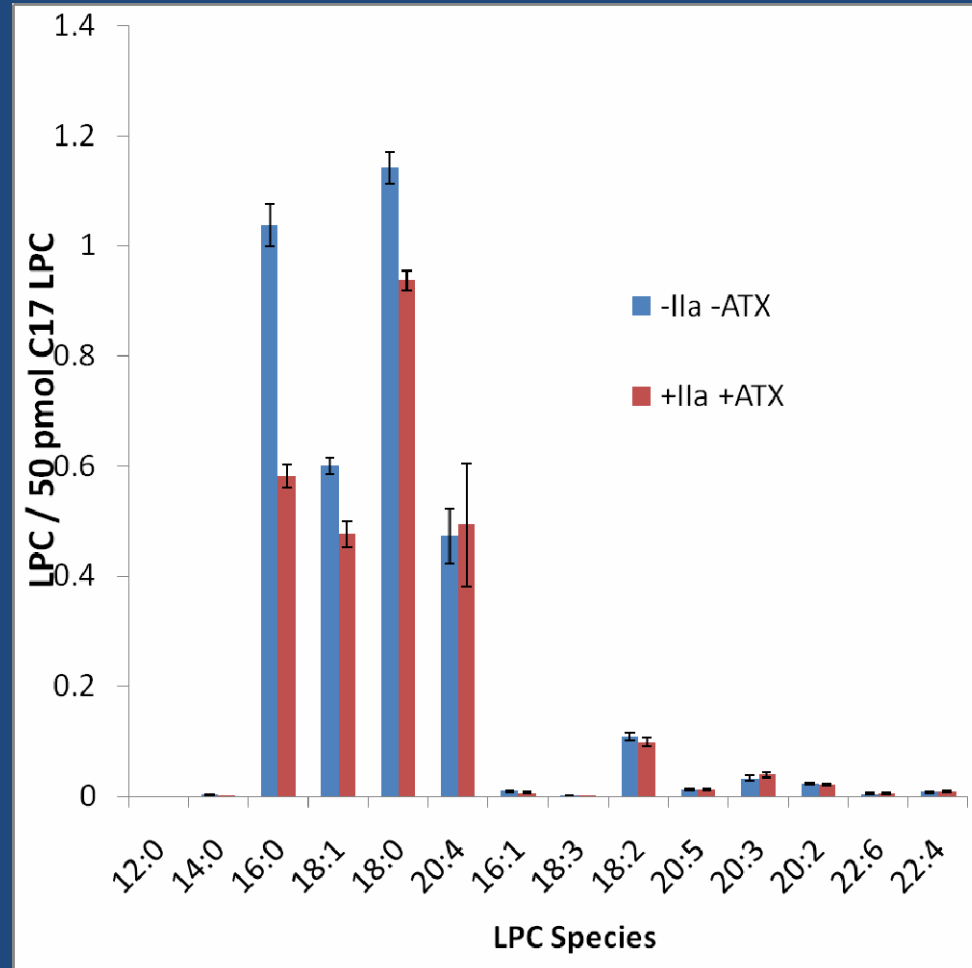
# Platelet Adhesion Is Inhibited with Integrin-Blocking Antibodies



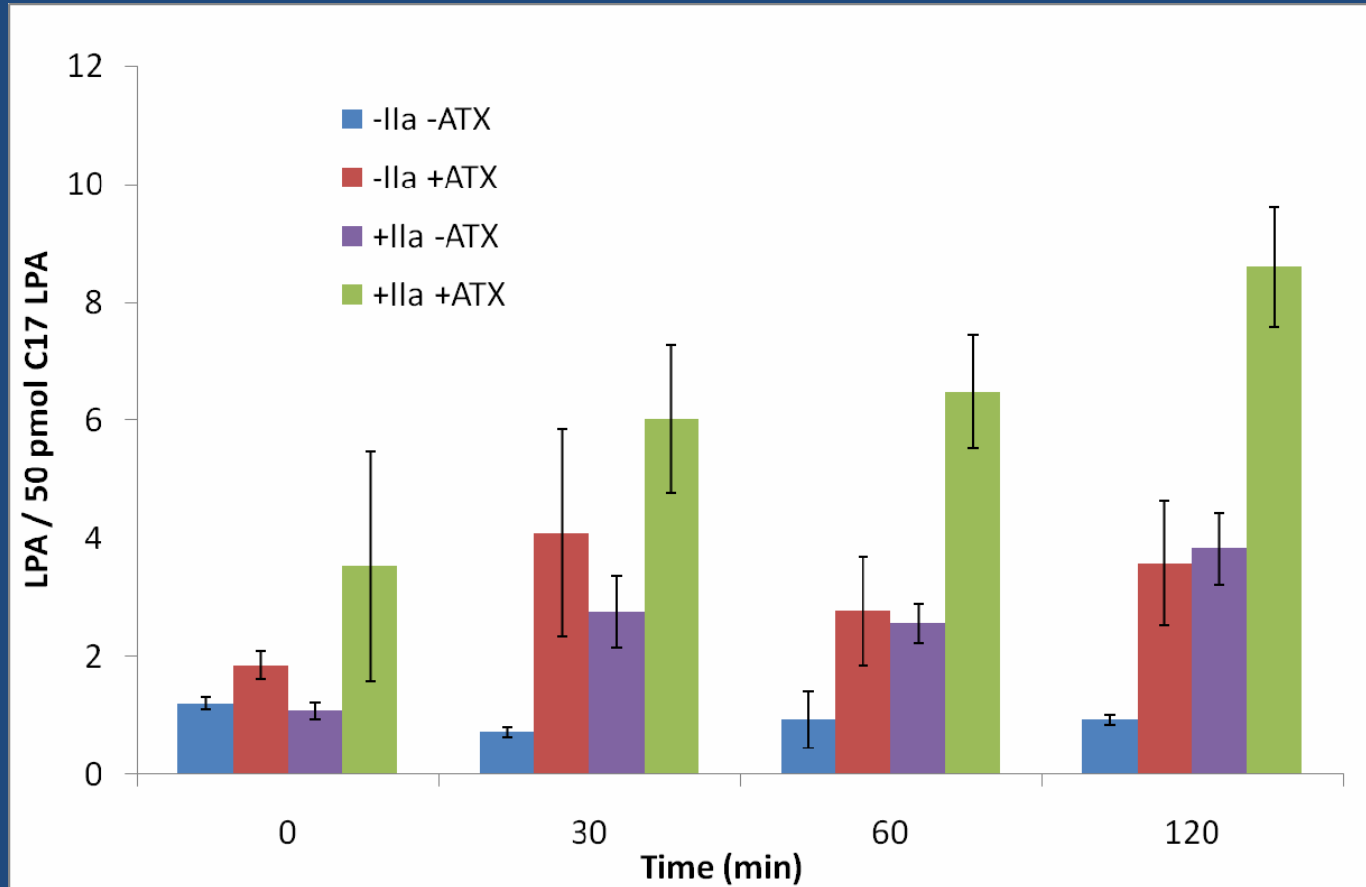
# Total LPC in ATX-Treated Activated Platelets



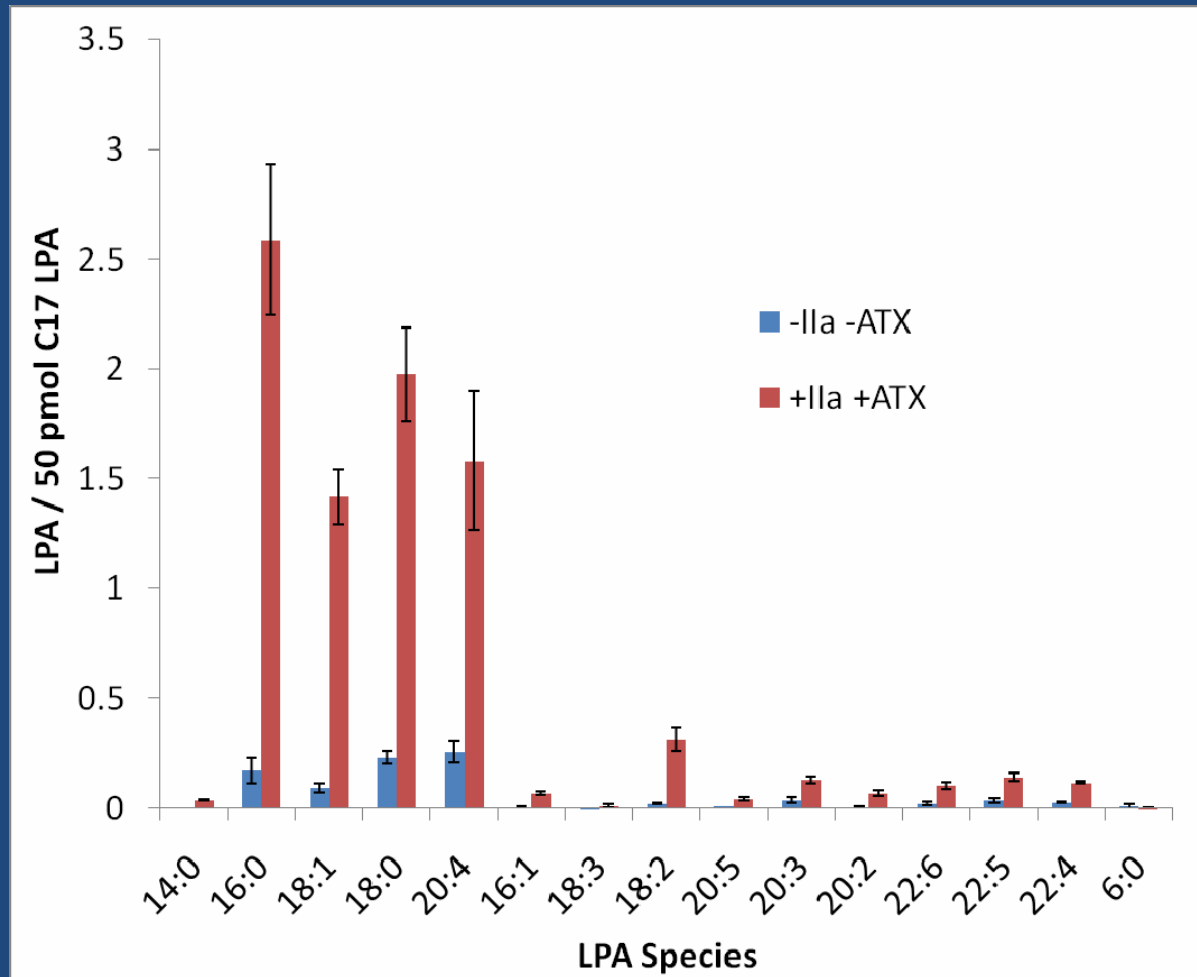
# LPC Species in ATX-Treated Activated Platelets



# Total LPA in ATX-Treated Activated Platelets

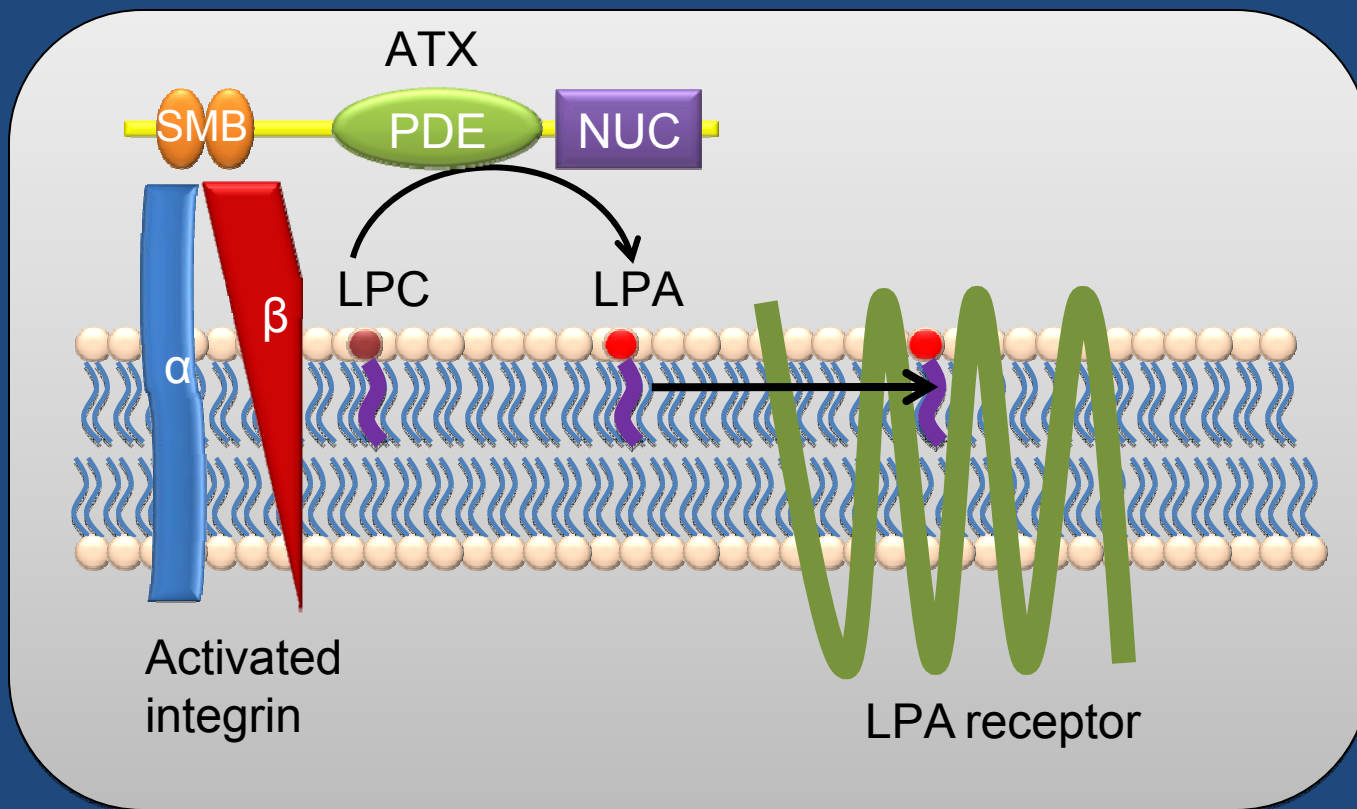


# LPA Species in ATX-Treated Activated Platelets



# Summary

- ATX interacts with platelets in an activation- and integrin-dependent manner
- ATX promotes LPA production in activated platelets



# Acknowledgements

## Advisory Committee

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# Thank You

