

# Interim Findings of the Research Project on Sebaceous Adenitis (SA)



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University of Göttingen

# SA affected Akita



Photograph: Joop & Astrid  
Ouwerkerk



Photograph: Lotte  
Lekholm

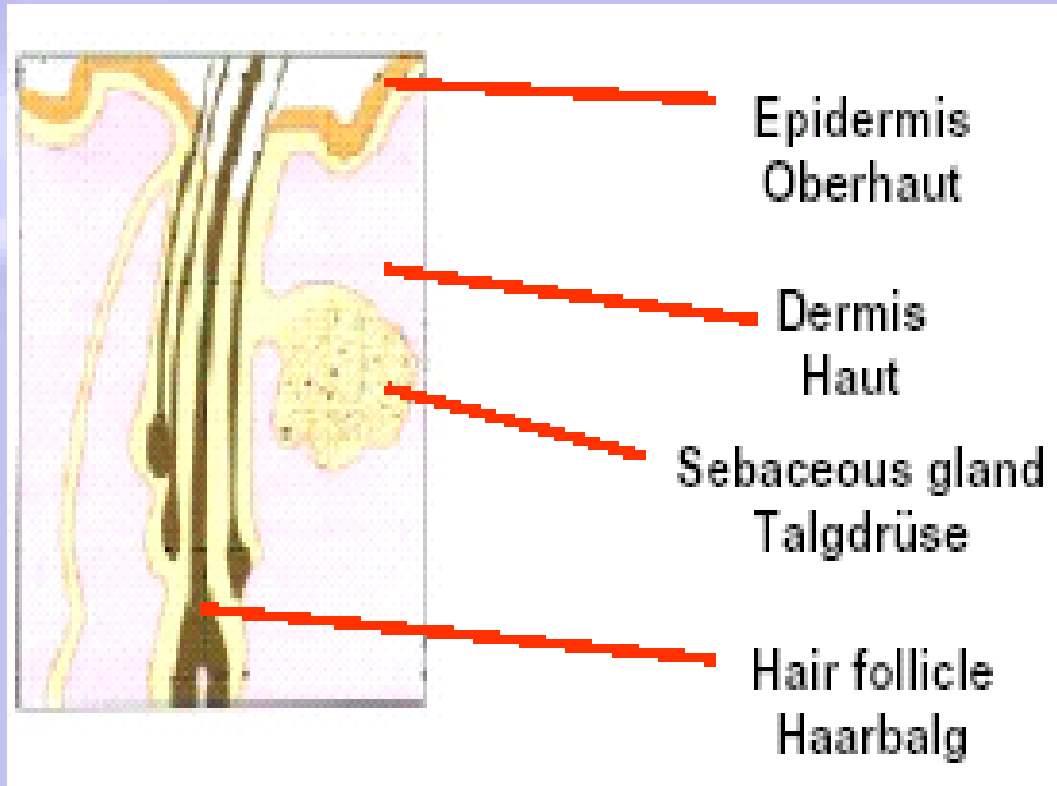
# Anatomy of the sebaceous gland



Photo by Mewes



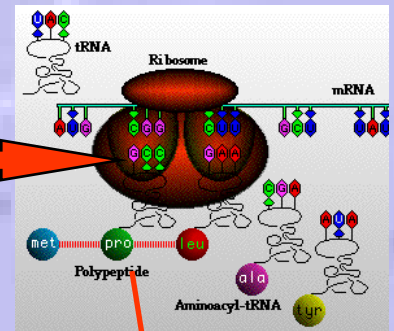
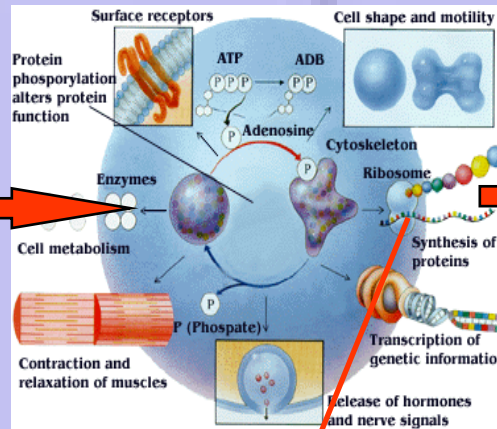
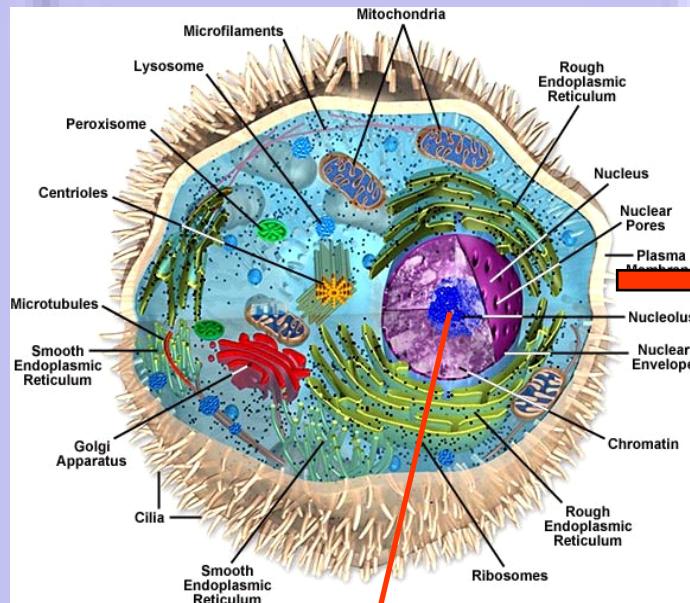
Photo by Reichler



# RNA-status:

Title:

“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“



DNA

RNA

Protein

Geneexpression



# RNA-status

**Title:**

**“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“**

**1. RNA- Extraction : Biopsie**

- Methods
- New Approach



**2. Differential-Display: RNA- Biopsie**

- Methods
- Results

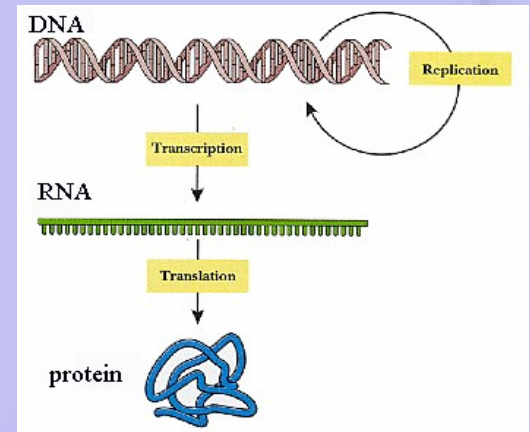
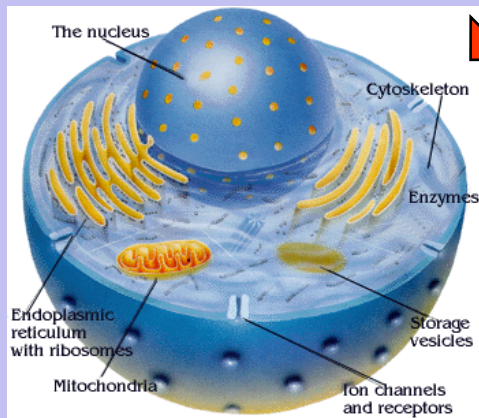
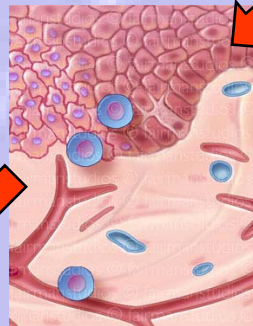
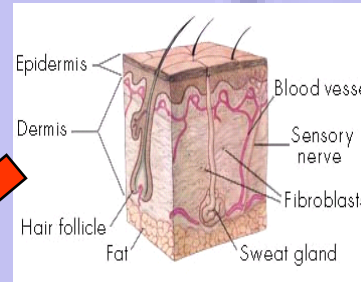
# RNA-status

**Title:**

**“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“**

## **1. RNA- Extraction : Biopsie**

- **Methods**
- **New Approach**



# RNA-status

**Title:**

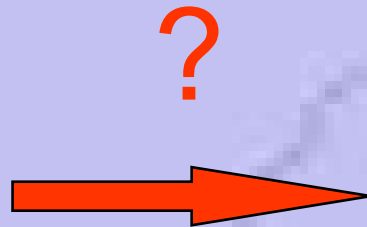
**“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“**

**1. RNA- Extraction : Biopsie**

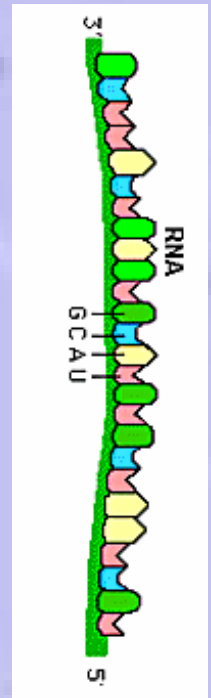
- Methods
- New Approach



Biopsie



RNA



# RNA-status

**Title:**

**“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“**

**1. RNA- Extraction : Biopsy**

- Methods
- New Approach



**Biopsy  
(Fatty, fibrous tissue)**

**New  
Approach**



**Skin (30mg) was disrupted  
into small pieces**

**20 special  
extraction steps**



**RNA**



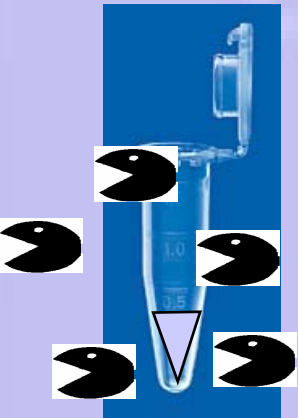
# RNA-status

Title:

“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“

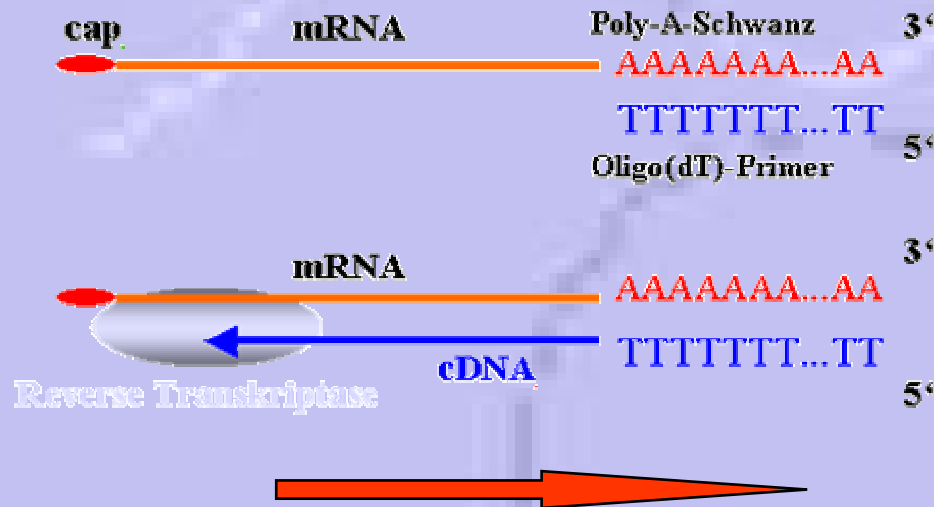
## 2. Differential-Display: RNA- Biopsie

- Methods
- Results



RNA

 = RNases



cDNA

# RNA-status

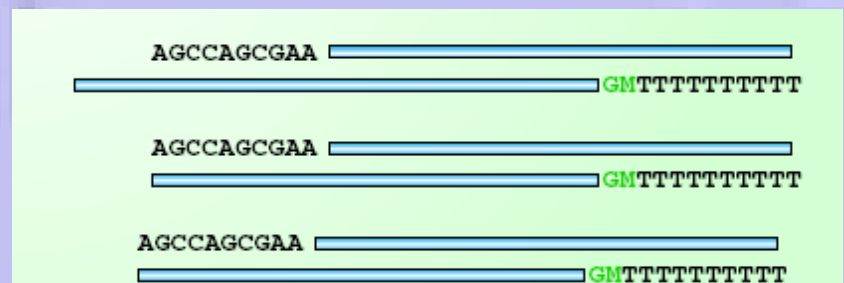
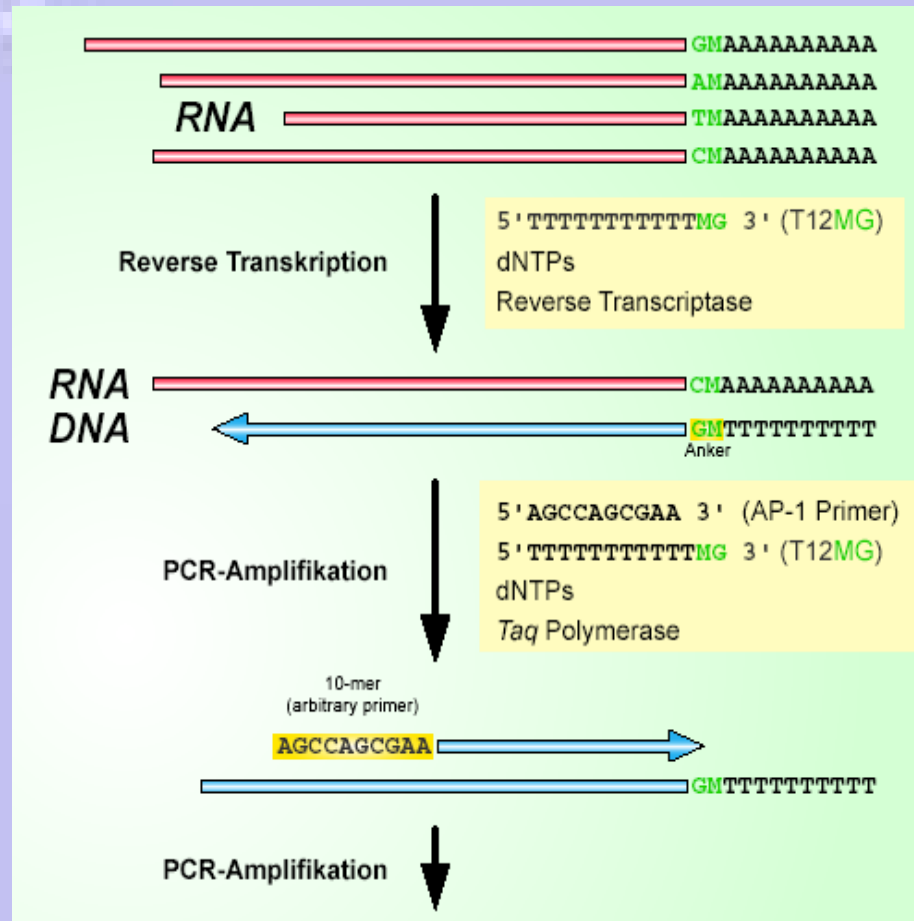
title:  
Differential genexpression  
in biopsies from SA-affected  
and non SA- affected Akitas“

## 2. Differential-Display: RNA- Biopsie

- Methods
- Results



RNA from Biopsie



# RNA-status

## Title:

## “Differential gene expression in biopsies from SA-affected and non SA- affected Akitas“

## 2. Differential-Display: RNA- Biopsie

- Methods
- Results



# PCR



# RNA-status

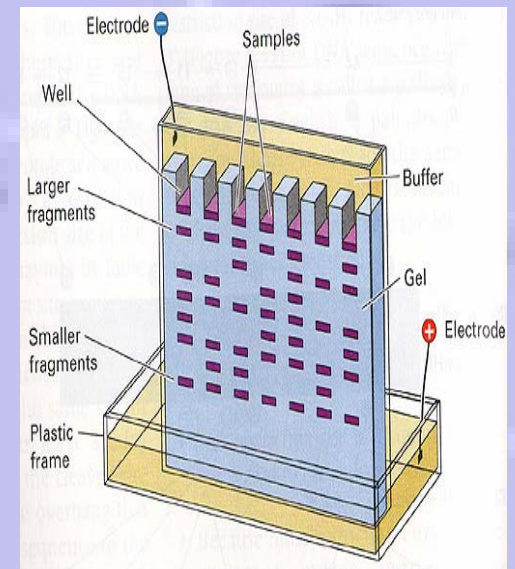
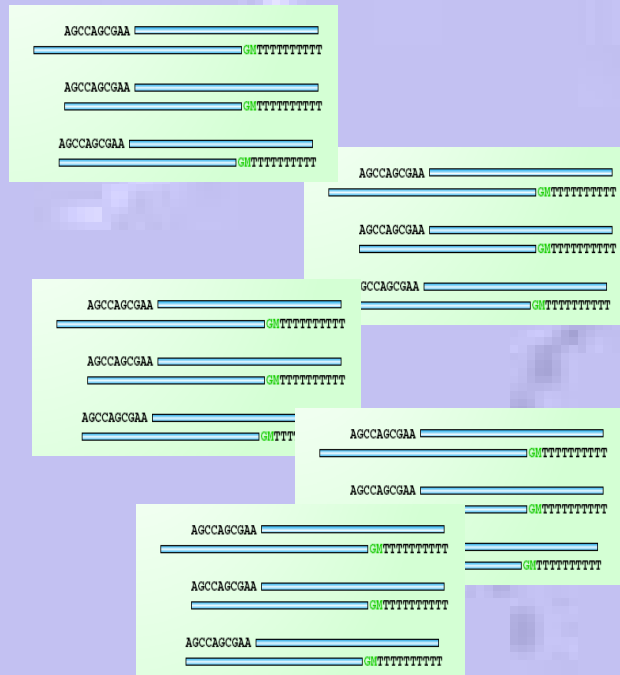
## Title: “Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“

### 2. Differential-Display: RNA- Biopsie

- Methods
- Results



PCR



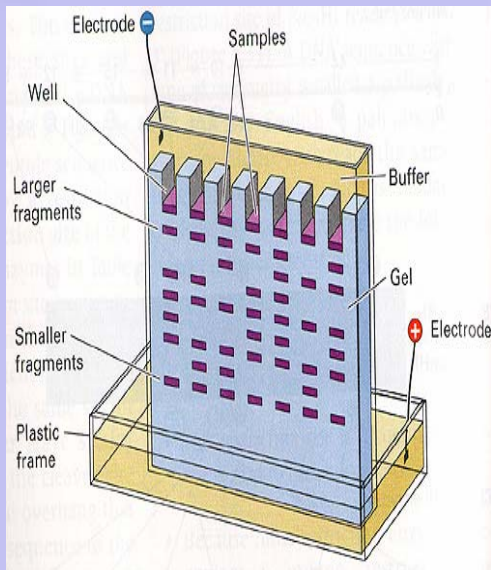
Separation by  
Electrophoresis

# RNA-status

## Title: “Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“

### 2. Differential-Display: RNA- Biopsie

- Methods
- Results



Separation by  
Electrophoresis

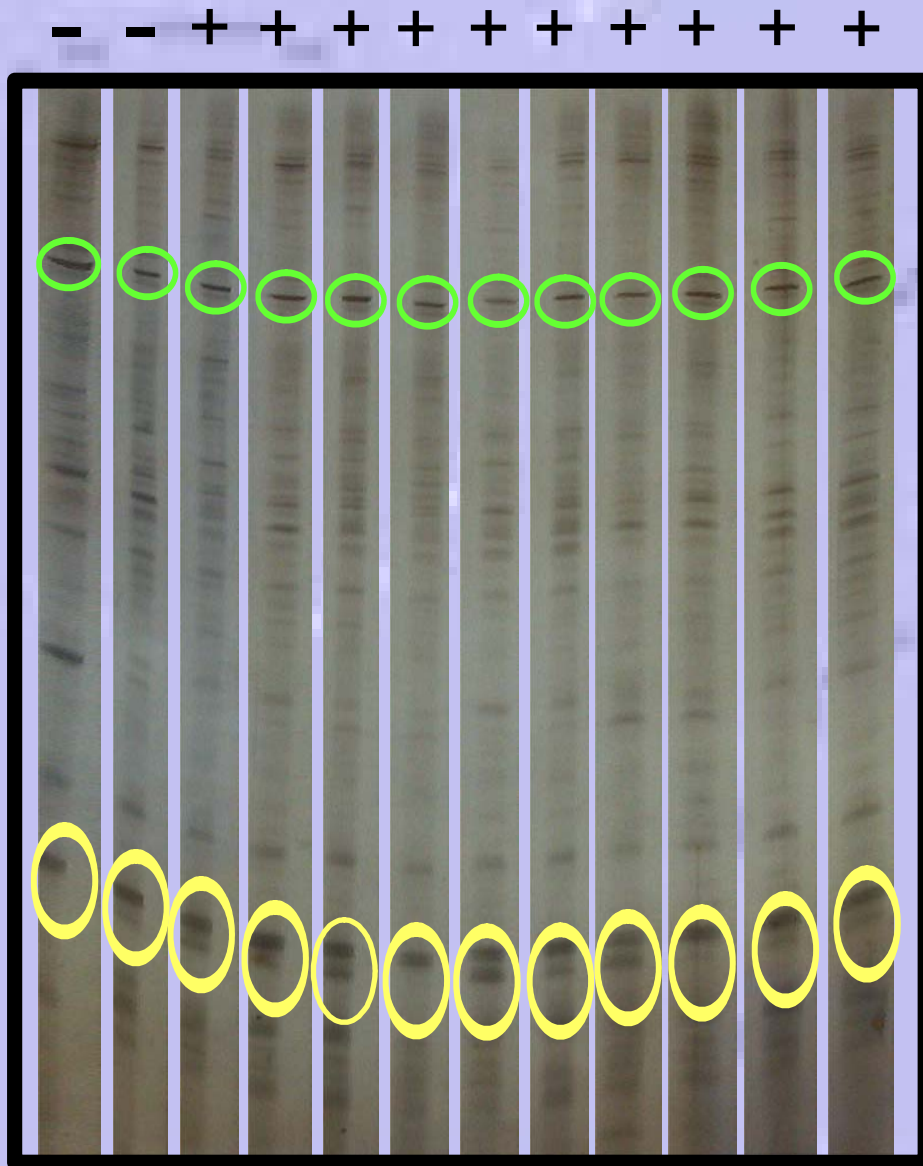


Silverstaining

24 different gels



# RNA-status



Legend:

- + SA affected
- Healthy dog
- Common bands
- Band differences

# RNA-status: Biopsie

## **Title:**

**“Differential genexpression in biopsies from SA-affected and non SA- affected Akitas“**

## **Results:**

- 18 informative bands
- The informative bands were extracted
- After re-amplification of the PCR-fragment we want to sequence the PCR-product

# RNA-status: Blood

**Title:**

**“Differential genexpression in blood from SA-affected and non SA- affected Akitas“**

## **1. RNA- Extraction : Blood**

- Methods
- New Approach



## **2. Differential-Display: RNA- Blood**

- Methods
- Results

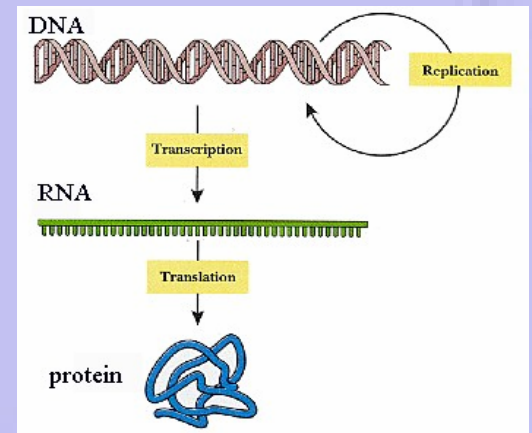
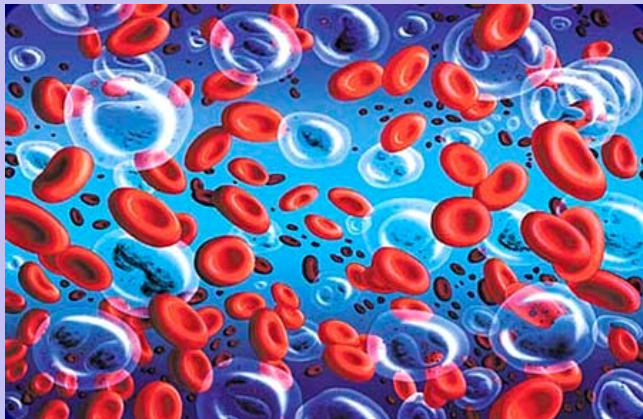
# RNA-status: Blood

**Title:**

**“Differential genexpression in blood from SA-affected and non SA- affected Akitas“**

## **1. RNA- Extraction : Blood**

- Methods
- New Approach



# RNA-status

**Title:**

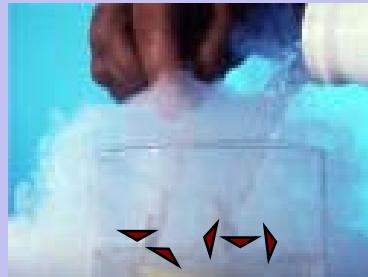
**“Differential genexpression in blood from SA-affected and non SA- affected Akitas“**

**1. RNA- Extraction : Blood**

- Methods
- New Approach



**New  
Approach**



**21 special  
extraction steps**



**Blood**

**Blood (200µl) was  
disrupted into powder**

**RNA**



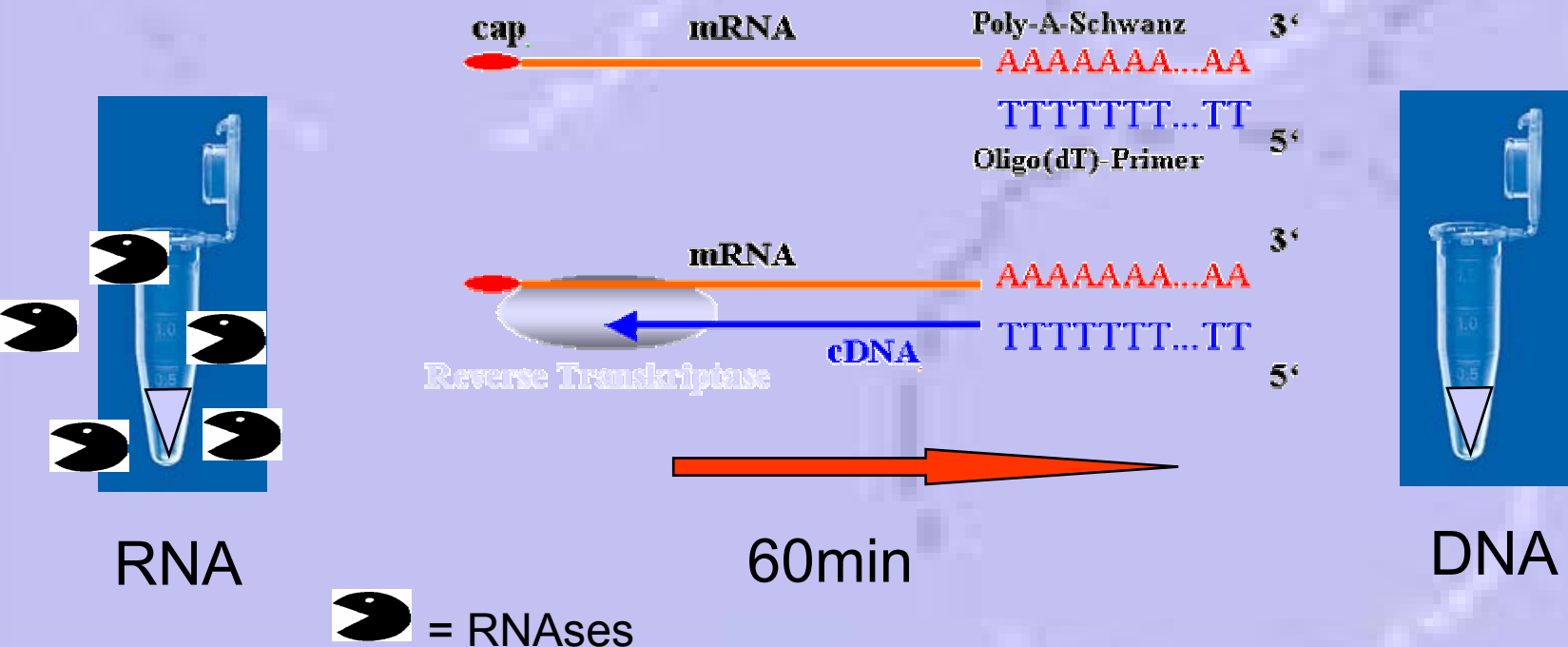
# RNA-status

Title:

“Differential genexpression in blood from SA-affected and non SA- affected Akitas“

## 2. Differential-Display: RNA- Blood

- Methods
- Results



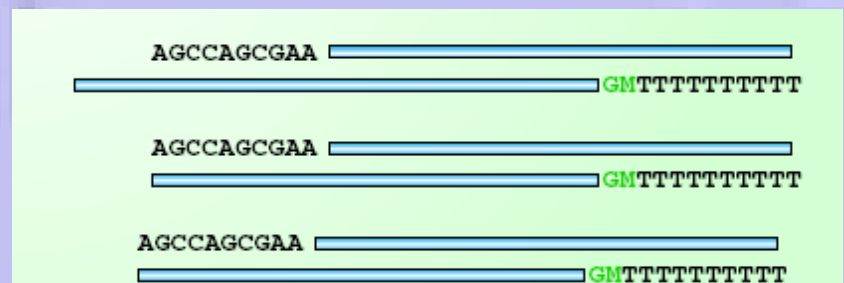
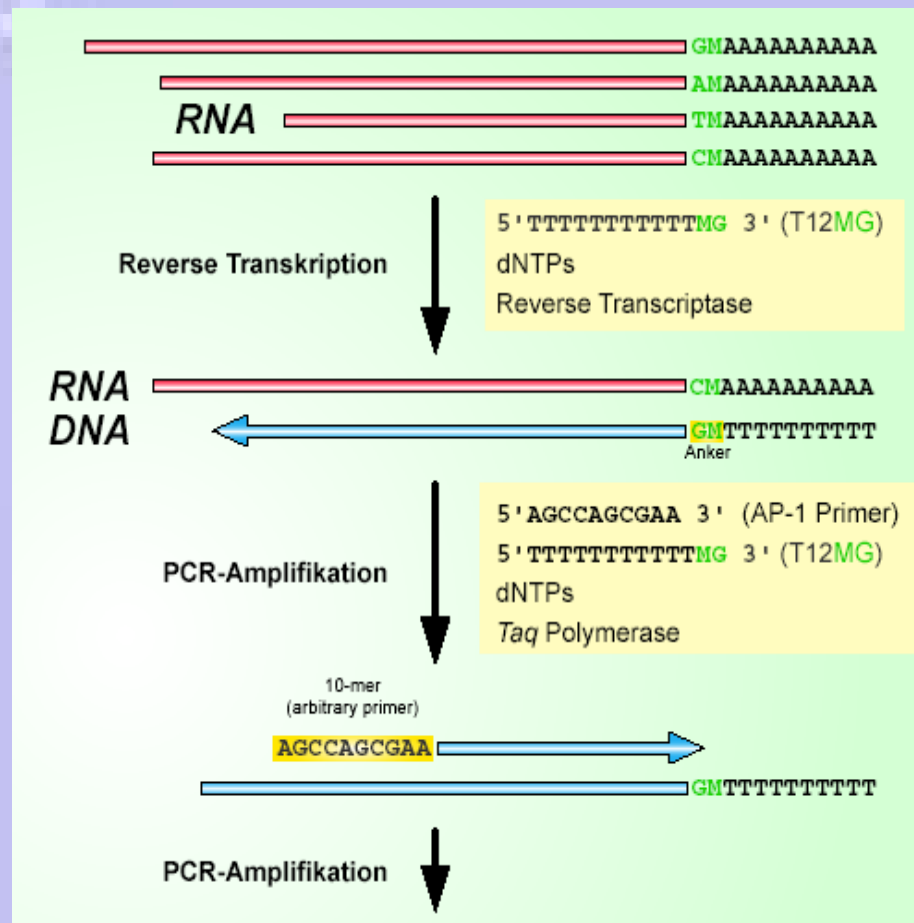
# RNA-status

## title: Differential genexpression in blood from SA-affected and non SA-affected Akitas“

### 2. Differential-Display: RNA- Blood - Methods - Results



RNA from blood



# RNA-status

## Title:

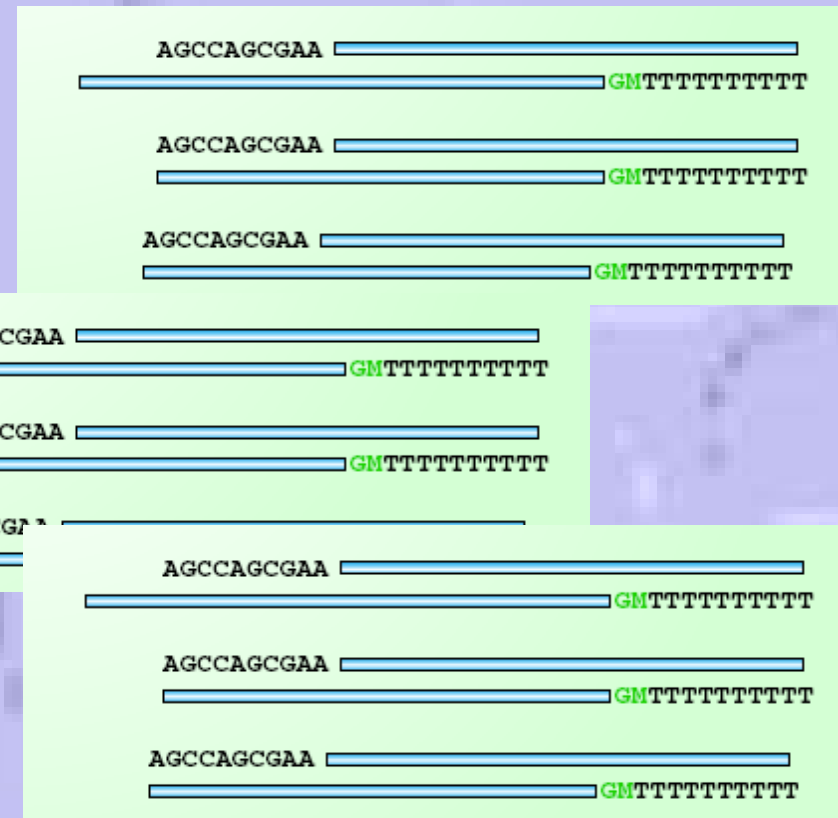
## **“Differential genexpression in blood from SA-affected and non SA- affected Akitas“**

## 2. Differential-Display: RNA- Blood

- Methods
- Results



# PCR



# RNA-status

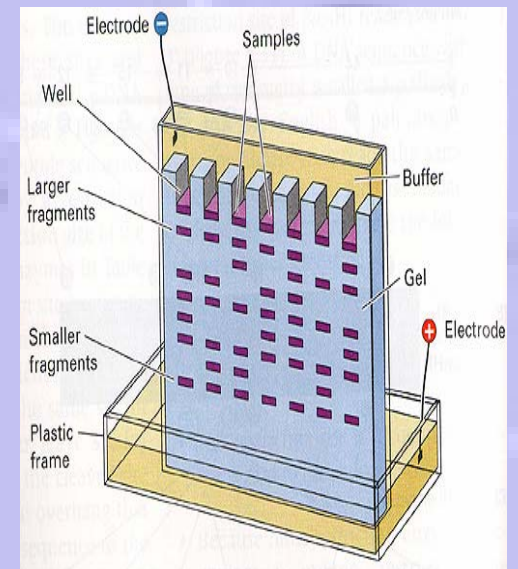
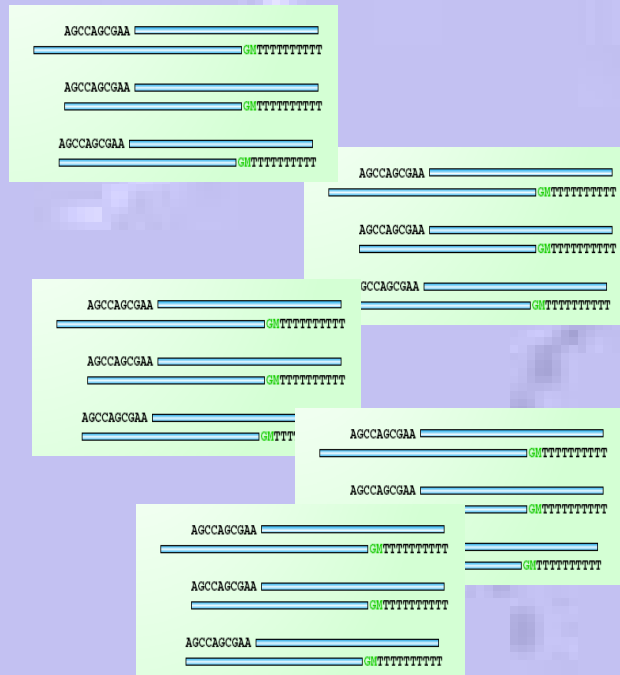
## Title: “Differential genexpression in blood from SA-affected and non SA-affected Akitas“

### 2. Differential-Display: RNA- Blood

- Methods
- Results



PCR



Separation by  
Electrophoresis

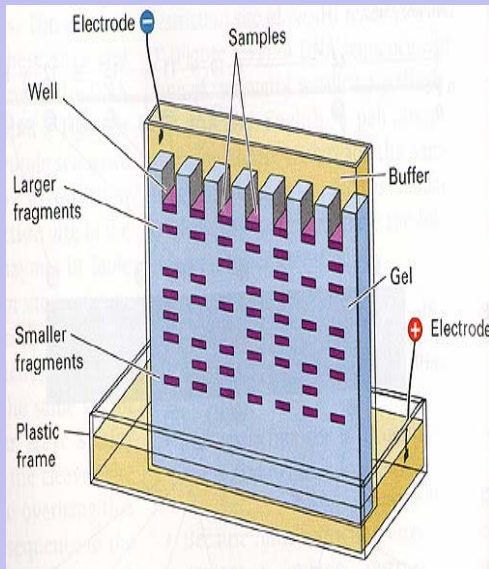
# RNA-status: Blood

**Title:**

**“Differential genexpression in blood from SA-affected and non SA- affected Akitas“**

## 2. Differential-Display: RNA- Blood

- Methods
- Results



Separation by  
Electrophoresis



Silverstaining

16 different gels



# RNA-status: Blood

## **Title:**

**“Differential genexpression in blood from SA-affected and non SA- affected Akitas“**

## **Results:**

- 12 informative bands
- The different bands were extracted
- After reamplification of the PCR- fragment we want to sequence the PCR-product.

# RNA-status blood: Results



Legend:

+ SA affected  
- Healthy dog

○ Common bands

○ Band difference

○ Special bands



# Summary : RNA-status

## Title:

**“Differential gene expression in biopsie/blood from SA-affected and non SA- affected Akitas“**

1. We detect 30 gene expression differences in blood and biopsy
2. To verify the expression pattern more samples need to be tested: As well as SA-positive and SA- negative Akitas
3. From the actual status of investigations we have observed a significant expression profile difference for RNA out of blood from SA-affected Akita vs healthy Akitas.



**Thank You!**