

CHAPTER 3

RESULTS

The glycoconjugates patterns of secretory epithelial cells in the prostate glands of all age groups of the animals are demonstrated by lectin labeling intensities summarized in Table 2-13 and illustrated in Figure 13-29. Different from the other ages of rats, the prostatic lobe of two week-old rats cannot be separated. Following in size and development, the ventral prostate lobe is greatest identified. However, in this study the prostate glands of 2 week-old rats are identified into ventral lobe following its size and development.

Although, the rat's prostate is a compound ductal gland completely lacking true acini (Cunha *et al.*, 1987), its secretory part shows some histological characteristics similar to those of true acinar gland type. Thus, the term "prostatic acini" will be used to call the secretory part of rat prostate gland in this thesis.

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Ventral prostate lobe

In two week-old rats (V2w), lectin Con-A, MPA, and WGA stained the secretory epithelial cells moderately, but faintly with DBA, PNA, PSA, and UEA-I (Fig. 14). In one month-old rat's (V1m), the secretory epithelial cells were weakly stained by Con-A, DBA, MPA, PSA and UEA-I, but moderately stained by WGA and very weakly stained by PNA (Fig.15). In three month-old rats (V3m), such cells were moderately stained with WGA; the staining with UEA-I and MPA were apparently weak and negligible with Con-A, DBA, PNA, and PSA (Fig. 16). In fourteen month-old rats (V14m) the secretory epithelial cells were moderately stained with PNA and WGA, weakly stained with MPA, PSA, and UEA-I, and very weakly stained with Con-A and DBA (Fig. 17).

Table 2 A comparison of the lectin staining intensity in secretory epithelial cells of prostatic acini in the ventral prostate lobe among age groups.

Lectin Ages	Con-A	DBA	MPA	PNA	PSA	UEA-I	WGA
2 weeks	++	+	++	+	+	+	++
1 month	+	+	+	±	+	+	++
3 months	±	±	+	±	±	+	++
14 months	±	±	+	++	+	+	++

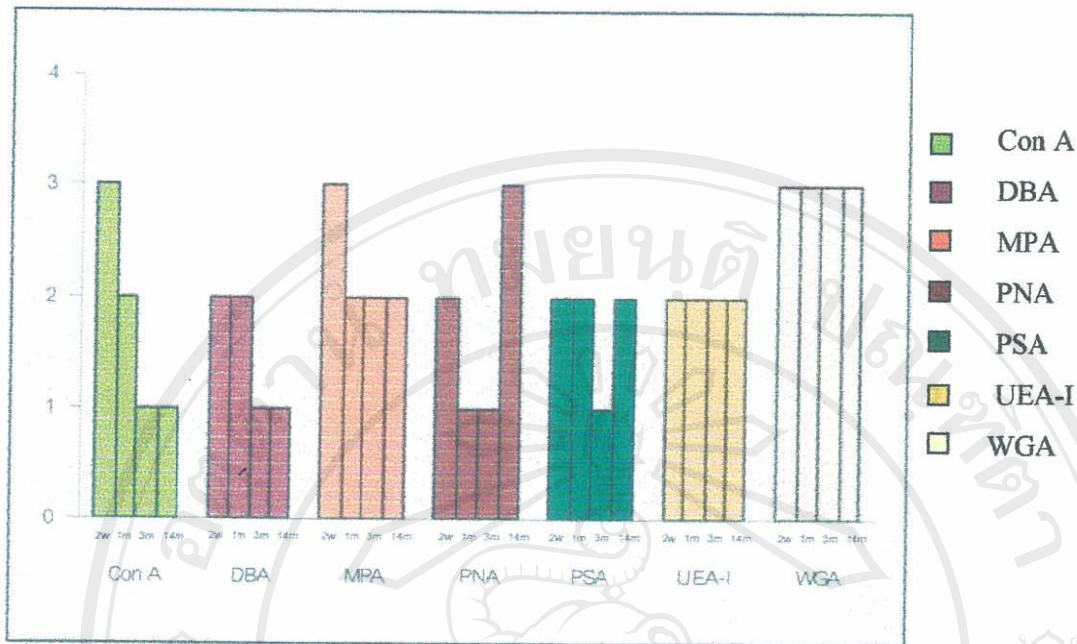


Figure 13 Histogram showing the patterns of the lectin staining intensity in the ventral prostate glands among age groups.

- 1 (+) Very weak staining
- 2 (+) Weak staining
- 3 (++) Moderate staining
- 4 (+++) Strong staining

2w 2 week-old rat

1m 1 month-old rat

3m 3 month-old rat

14m 14 month-old rat

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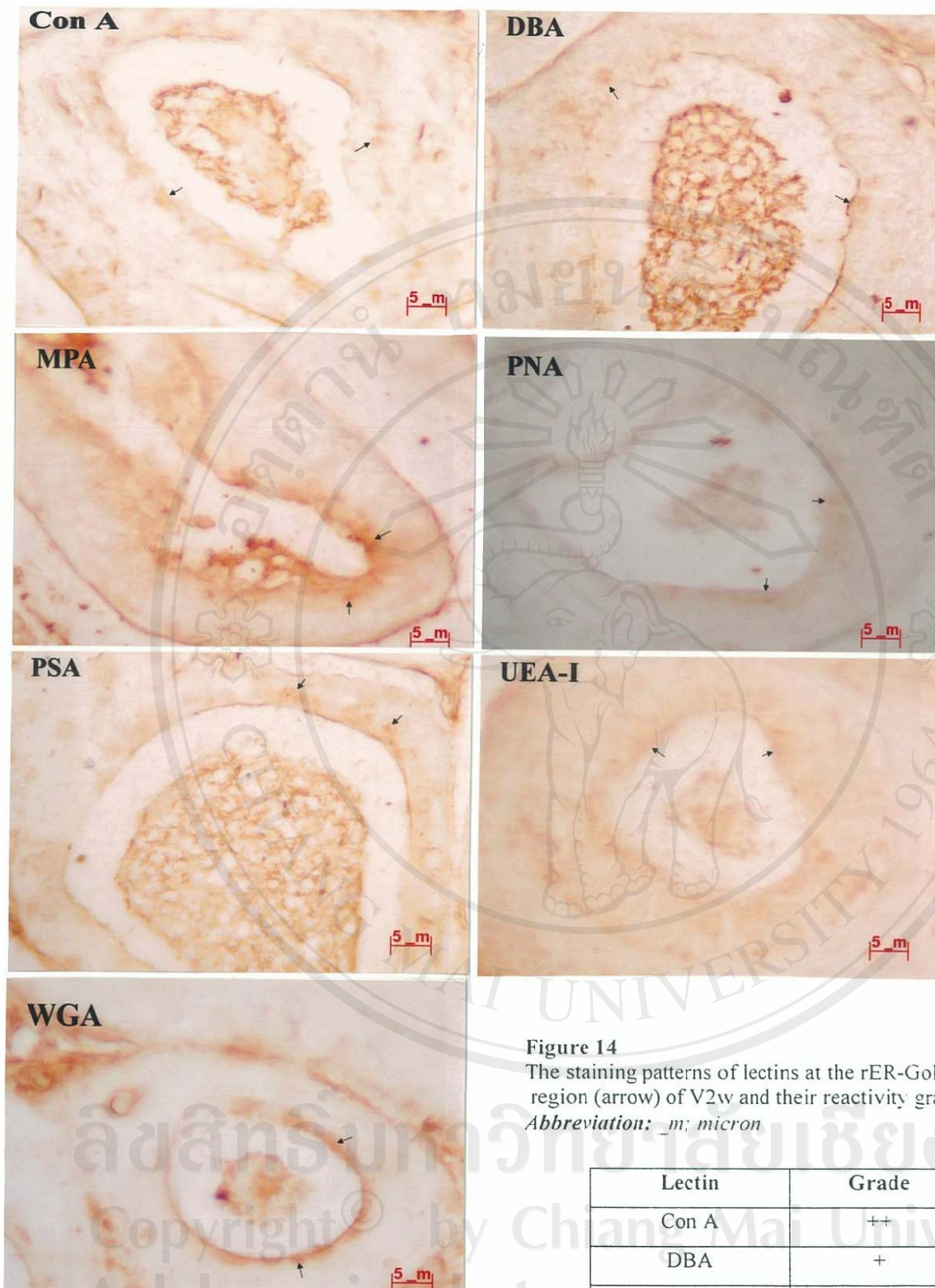


Figure 14
The staining patterns of lectins at the rER-Golgi region (arrow) of V2w and their reactivity grades.
Abbreviation: m; micron

Lectin	Grade
Con A	++
DBA	+
MPA	++
PNA	+
PSA	+
UEA-I	+
WGA	++

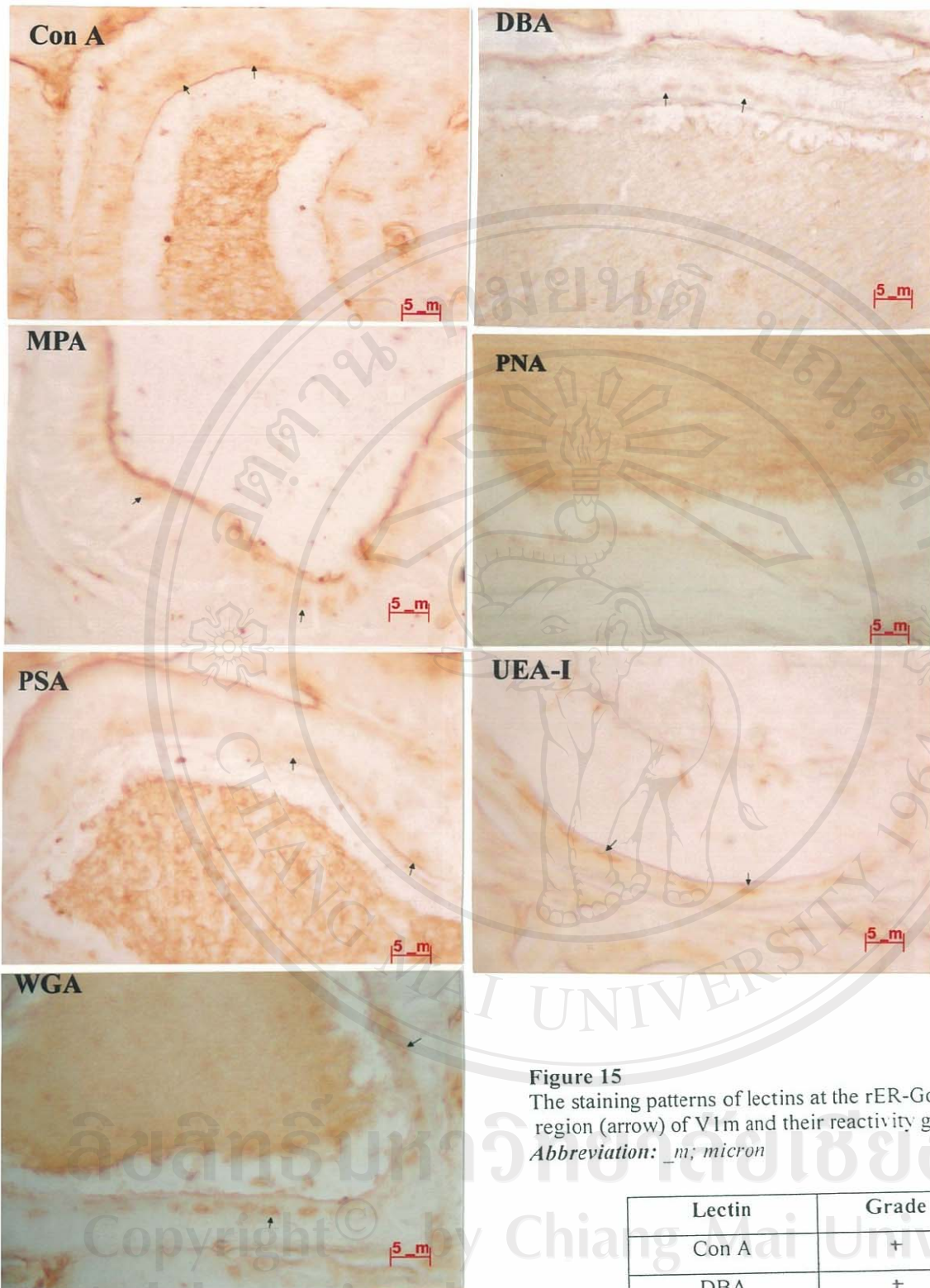


Figure 15

The staining patterns of lectins at the rER-Golgi region (arrow) of V1m and their reactivity grades.

Abbreviation: μ m; micron

Lectin	Grade
Con A	+
DBA	+
MPA	+
PNA	\pm
PSA	+
UEA-I	+
WGA	++

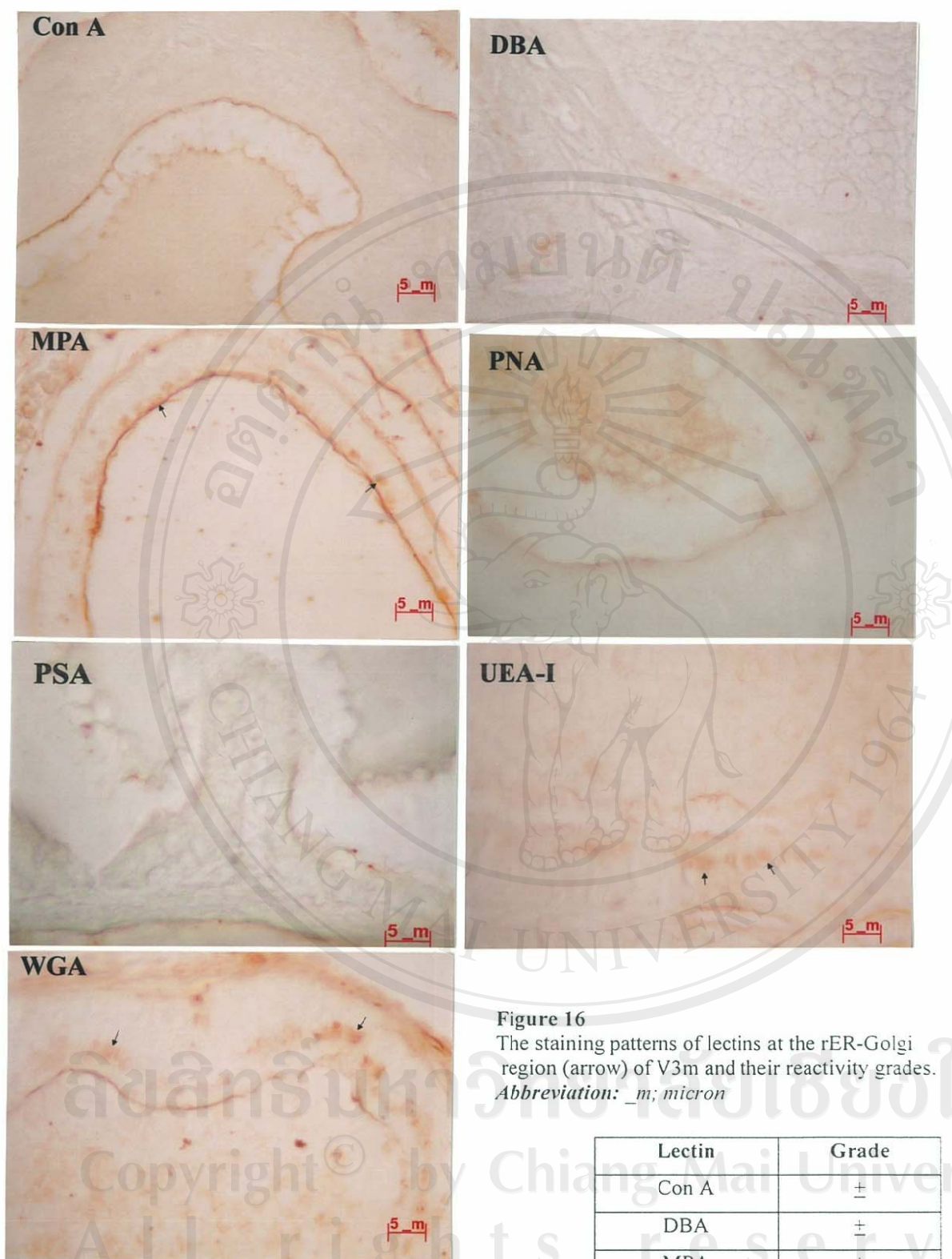


Figure 16
 The staining patterns of lectins at the rER-Golgi region (arrow) of V3m and their reactivity grades.
 Abbreviation: *_m*; micron

Lectin	Grade
Con A	±
DBA	±
MPA	+
PNA	±
PSA	±
UEA-I	+
WGA	++

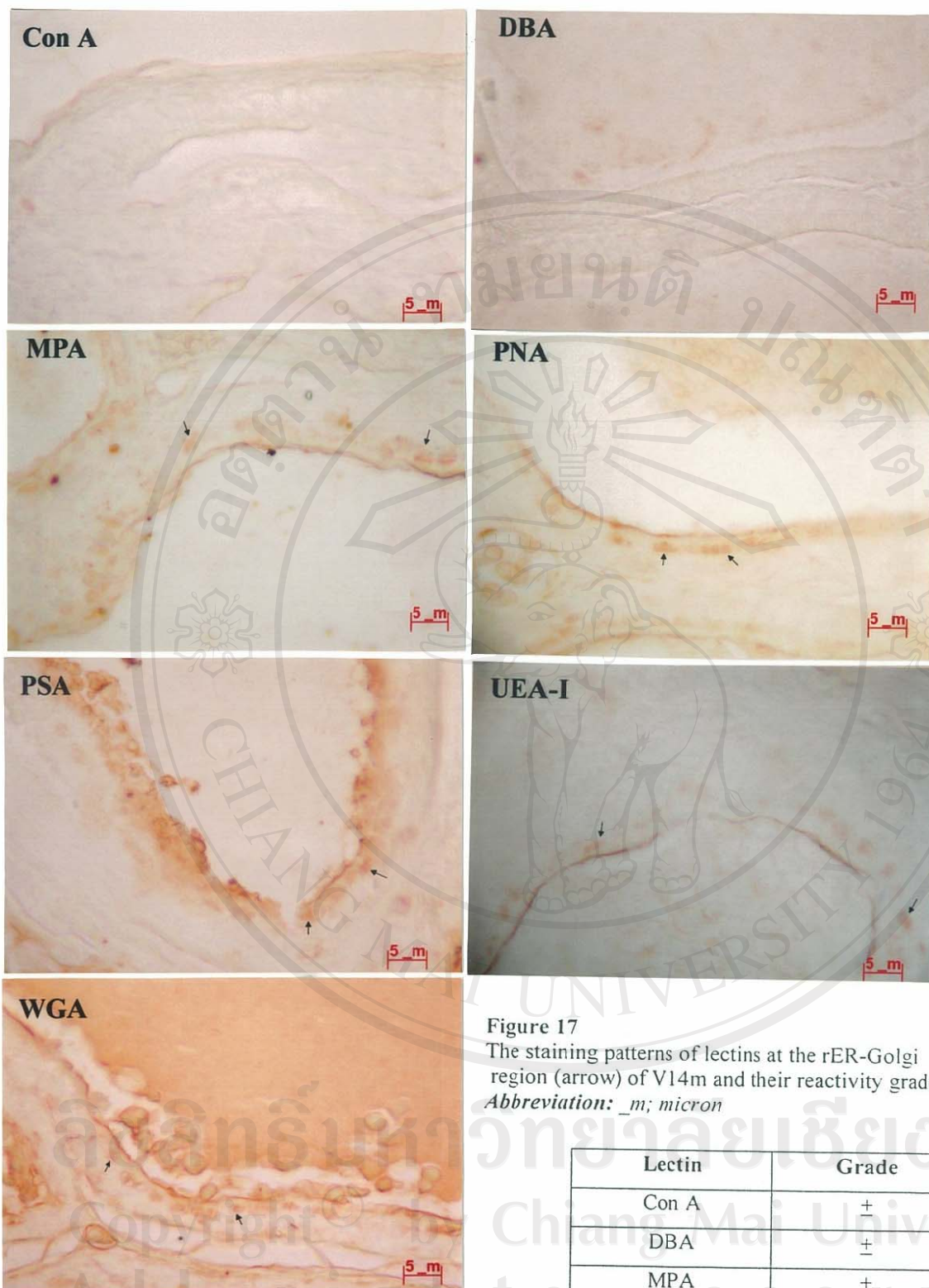


Figure 17

The staining patterns of lectins at the rER-Golgi region (arrow) of V14m and their reactivity grades.

Abbreviation: μ ; micron

Lectin	Grade
Con A	+
DBA	±
MPA	+
PNA	++
PSA	+
UEA-I	+
WGA	++

Dorsal prostate lobe

In one month-old rats (D1m), the secretory cells of the dorsal prostate strongly reacted with UEA-I, moderately with Con-A, DBA, MPA, PSA, and WGA, but very weakly with PNA (Fig. 19). In three month-old rats (D3m), the secretory epithelial cells was strongly reactive with UEA-I and WGA, moderately stained with Con-A, DBA, MPA and PNA, but weakly stained with PSA (Fig. 20). In fourteen month-old rats (D14m), PNA, UEA-I, and WGA were strongly labeling in secretory epithelial cells, whereas moderately labeled by PSA, and MPA, weakly labeled by Con A, and very weakly labeled by DBA (Fig. 21).

Table 3 A comparison of the lectin staining intensity in secretory epithelial cells of prostatic acini in the dorsal prostate lobe among age groups.

Lectin Ages	Con-A	DBA	MPA	PNA	PSA	UEA-I	WGA
1 month	++	++	++	±	++	+++	++
3 months	++	++	++	++	+	+++	+++
14 months	+	±	++	+++	++	+++	+++

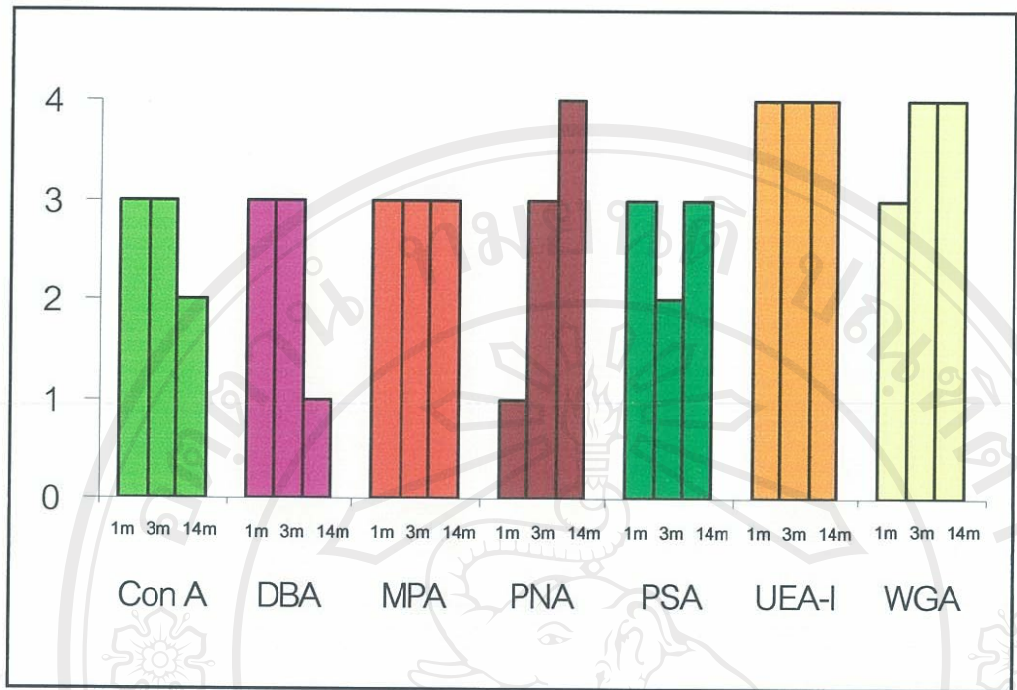


Figure 18 Histogram showing the patterns of the lectin staining intensity in the dorsal prostate glands among age groups.

- Con A
- DBA
- MPA
- PNA
- PSA
- UEA-I
- WGA

- | | | |
|---|-------|--------------------|
| 1 | (±) | Very weak staining |
| 2 | (+) | Weak staining |
| 3 | (++) | Moderate staining |
| 4 | (+++) | Strong staining |

- | | |
|-----|-------------------|
| 1m | 1 month-old rat |
| 3m | 3 months-old rat |
| 14m | 14 months-old rat |

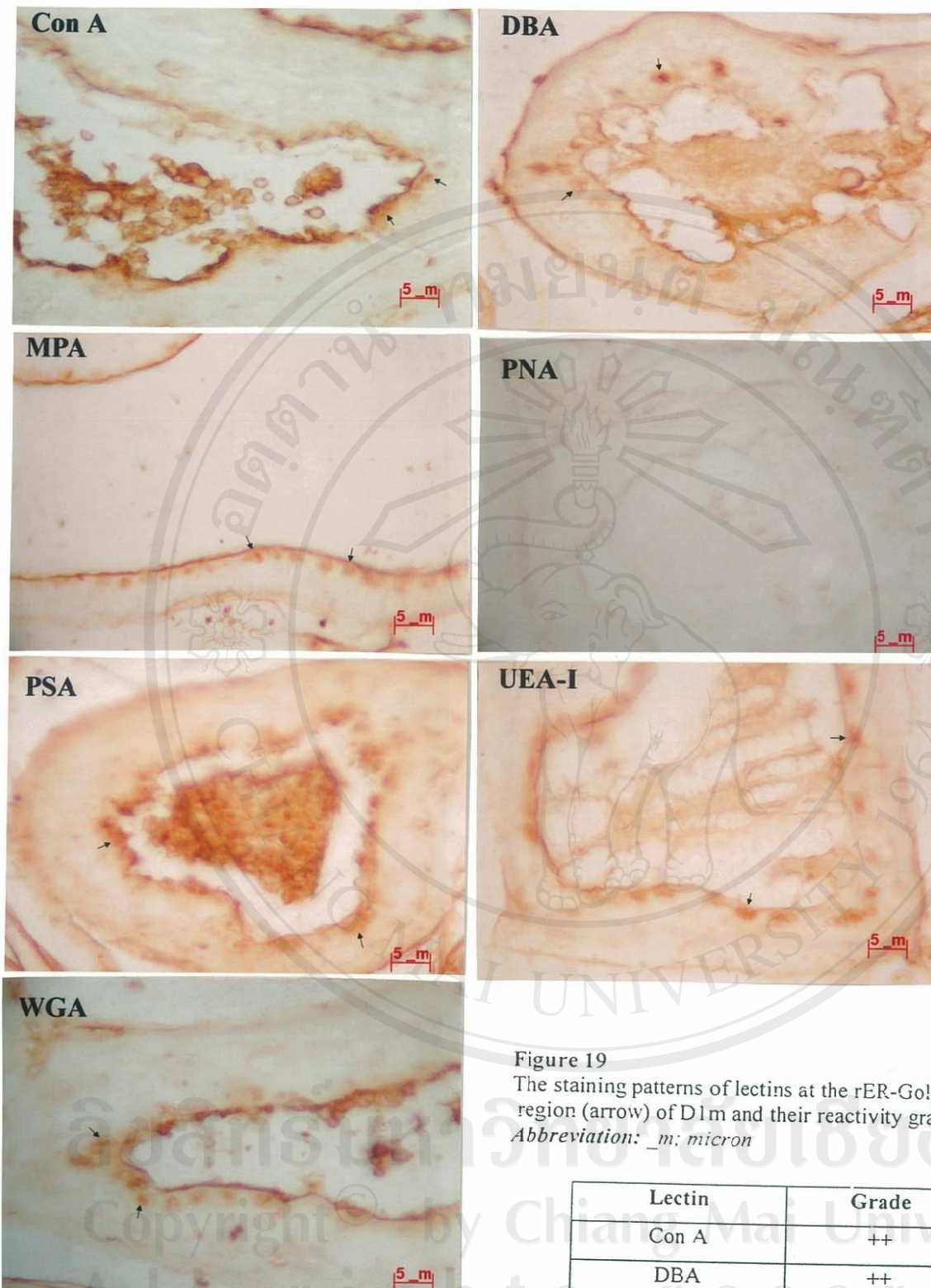


Figure 19
The staining patterns of lectins at the rER-Golgi region (arrow) of DIm and their reactivity grades.
Abbreviation: *m*; micron

Lectin	Grade
Con A	++
DBA	++
MPA	++
PNA	±
PSA	++
UEA-I	+++
WGA	++

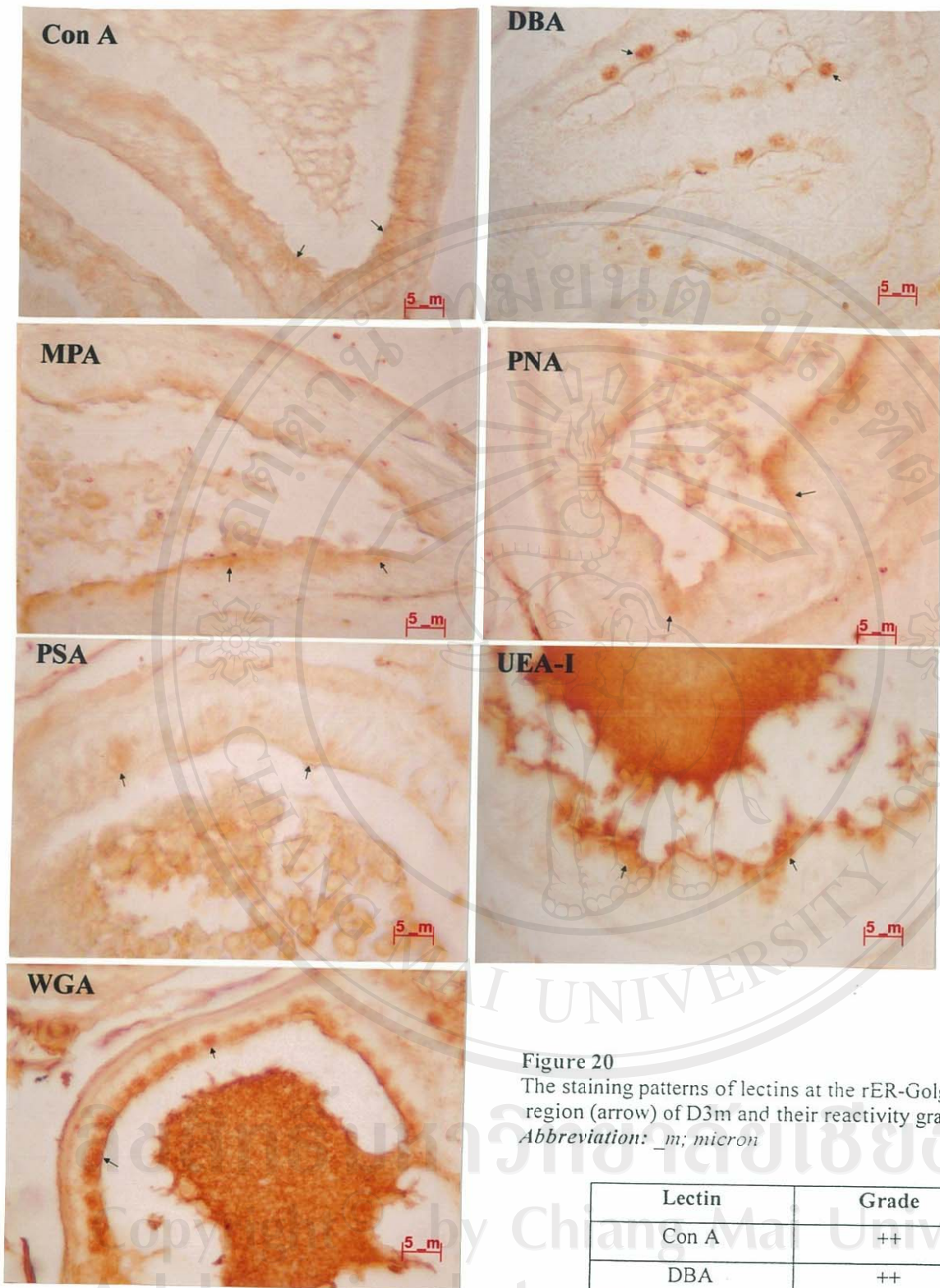


Figure 20

The staining patterns of lectins at the rER-Golgi region (arrow) of D3m and their reactivity grades.

Abbreviation: *m*; micron

Lectin	Grade
Con A	++
DBA	++
MPA	++
PNA	++
PSA	+
UEA-I	+++
WGA	+++

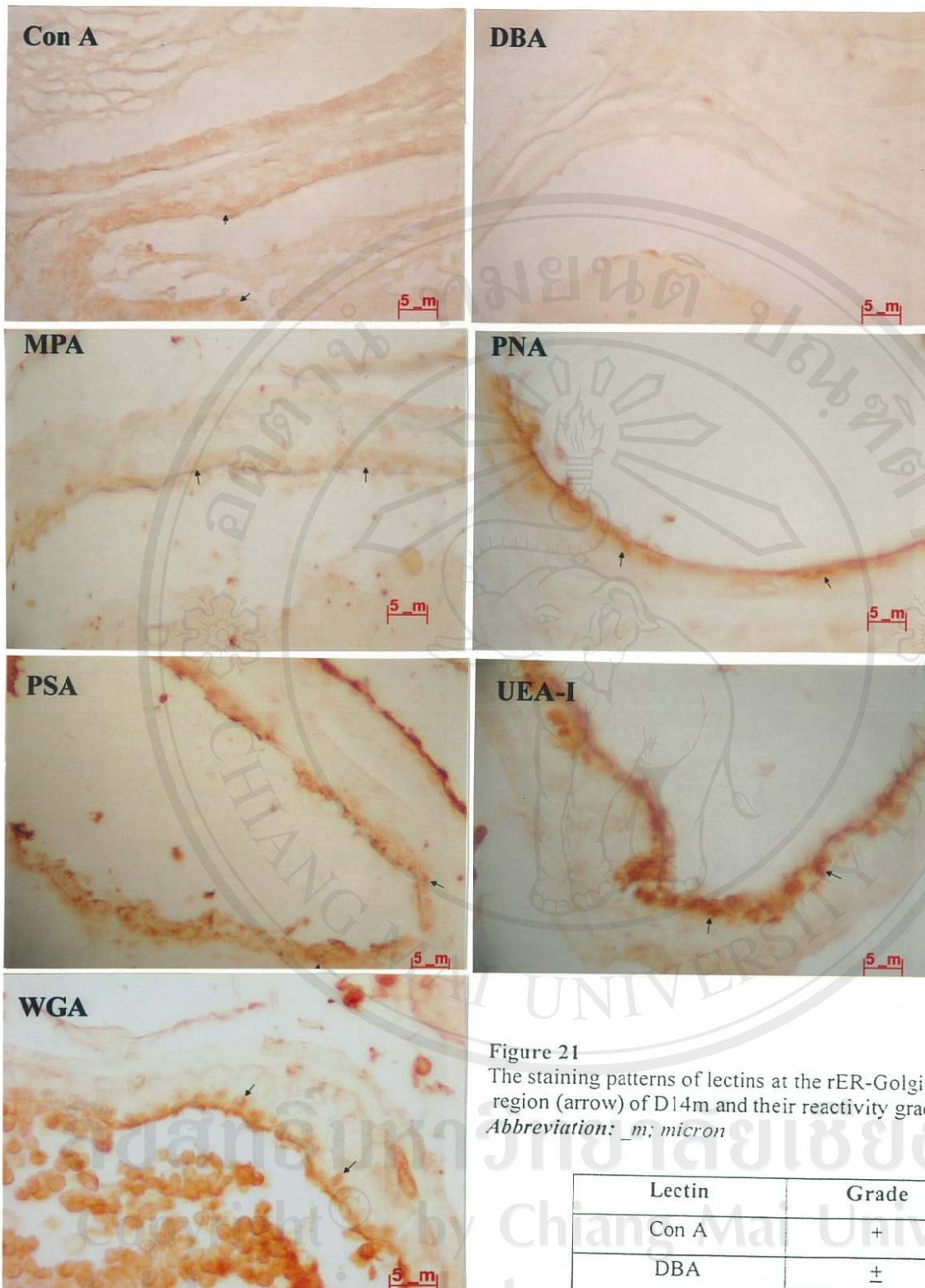


Figure 21

The staining patterns of lectins at the rER-Golgi region (arrow) of D14m and their reactivity grades.

Abbreviation: *m*: micron

Lectin	Grade
Con A	+
DBA	±
MPA	++
PNA	+++
PSA	++
UEA-I	+++
WGA	+++

Lateral prostate lobe

In one month-old rats (L1m), the secretory epithelial cells reacted strongly with WGA, moderately with Con-A, DBA, MPA, PSA, and UEA-I, but weakly with PNA (Fig. 23). In three month-old rats (L3m), the secretory epithelial cells reacted strongly with DBA, UEA-I, and WGA, moderately with Con-A, MPA, and PSA, but weakly with PNA (Fig. 24). In fourteen month-old rats (L14m) the secretory epithelial cells reacted strongly with DBA and WGA, while the other lectins were moderately labelled (Fig. 25).

Table 4 A comparison of the lectin staining intensity in secretory epithelial cells of prostatic acini in the lateral prostate lobe among age groups.

Lectin Ages	Lectin						
	Con-A	DBA	MPA	PNA	PSA	UEA-I	WGA
1 month	++	++	++	+	++	++	+++
3 months	++	+++	++	+	++	+++	+++
14 months	++	+++	++	++	++	++	+++

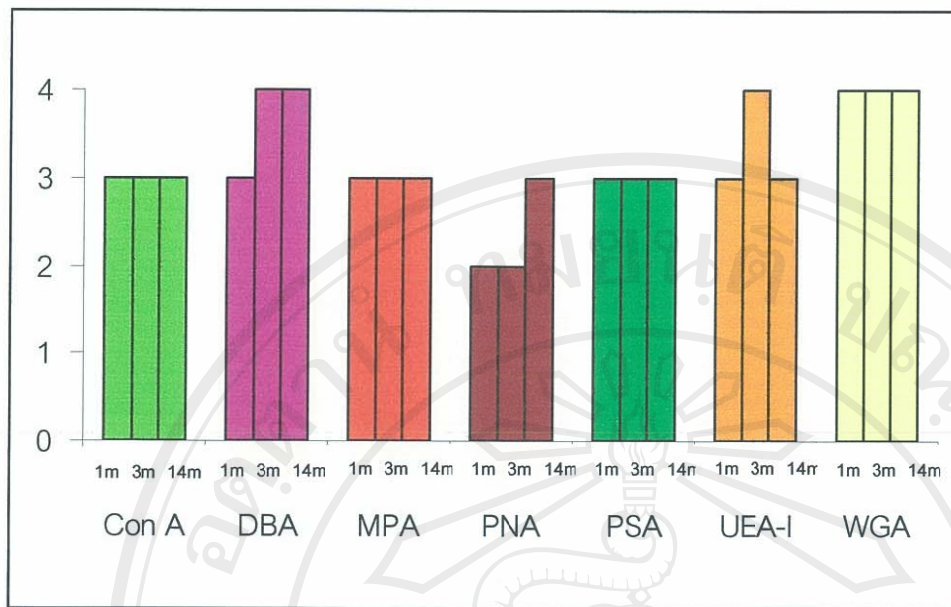


Figure 22 Histogram showing the patterns of the lectin staining intensity in the lateral prostate glands among age groups.

- Con A
- DBA
- MPA
- PNA
- PSA
- UEA-I
- WGA

- 1 (+) Very weak staining
- 2 (+) Weak staining
- 3 (++) Moderate staining
- 4 (+++) Strong staining
- 1m 1 month-old rat
- 3m 3 months-old rat
- 14m 14 months-old rat

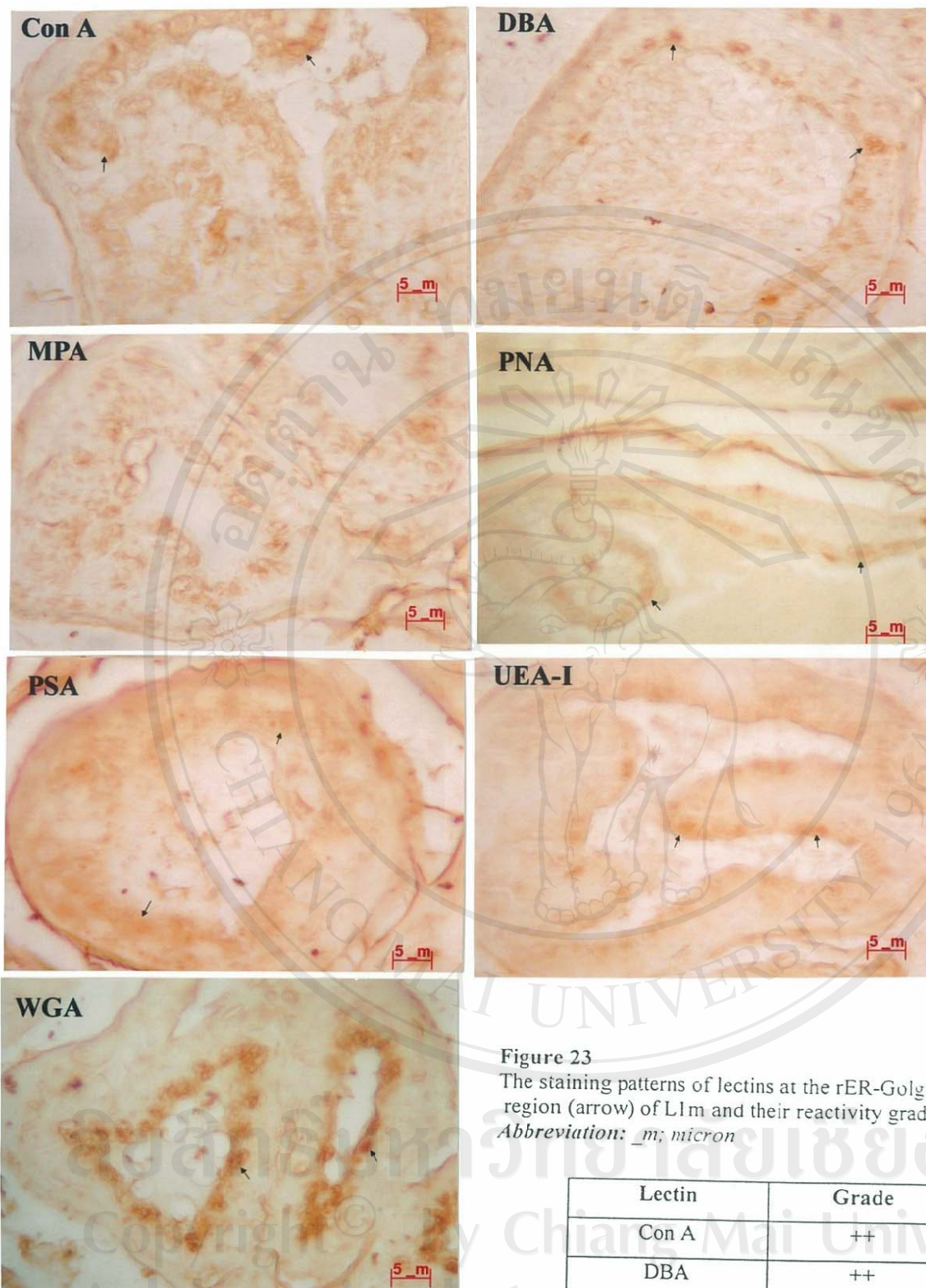


Figure 23

The staining patterns of lectins at the rER-Golgi region (arrow) of L1m and their reactivity grades.

Abbreviation: *m*, micron

Lectin	Grade
Con A	++
DBA	++
MPA	++
PNA	+
PSA	++
UEA-I	++
WGA	+++

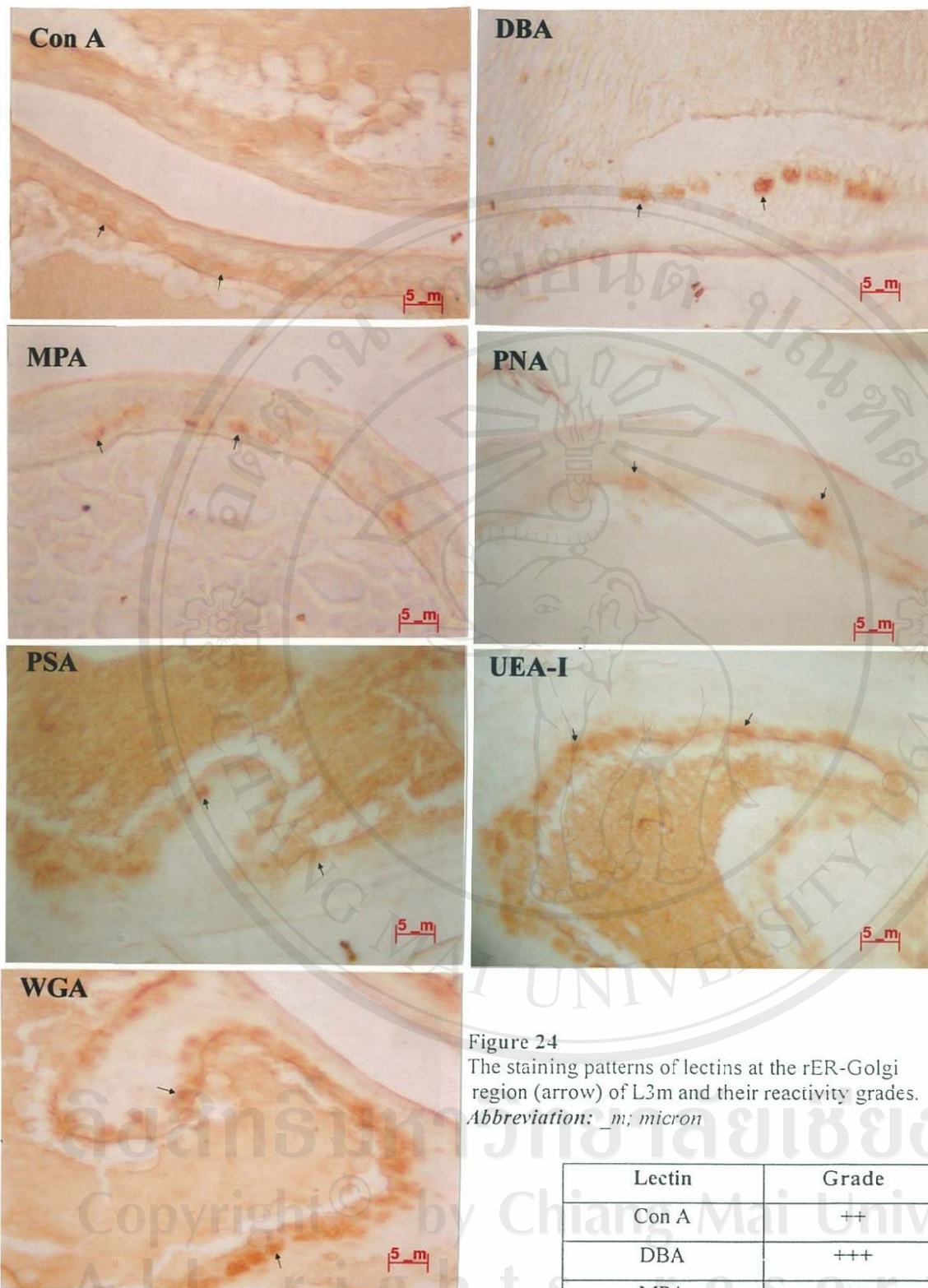


Figure 24
 The staining patterns of lectins at the rER-Golgi region (arrow) of L3m and their reactivity grades.
 Abbreviation: *m*; micron

Lectin	Grade
Con A	++
DBA	+++
MPA	++
PNA	+
PSA	++
UEA-I	+++
WGA	+++

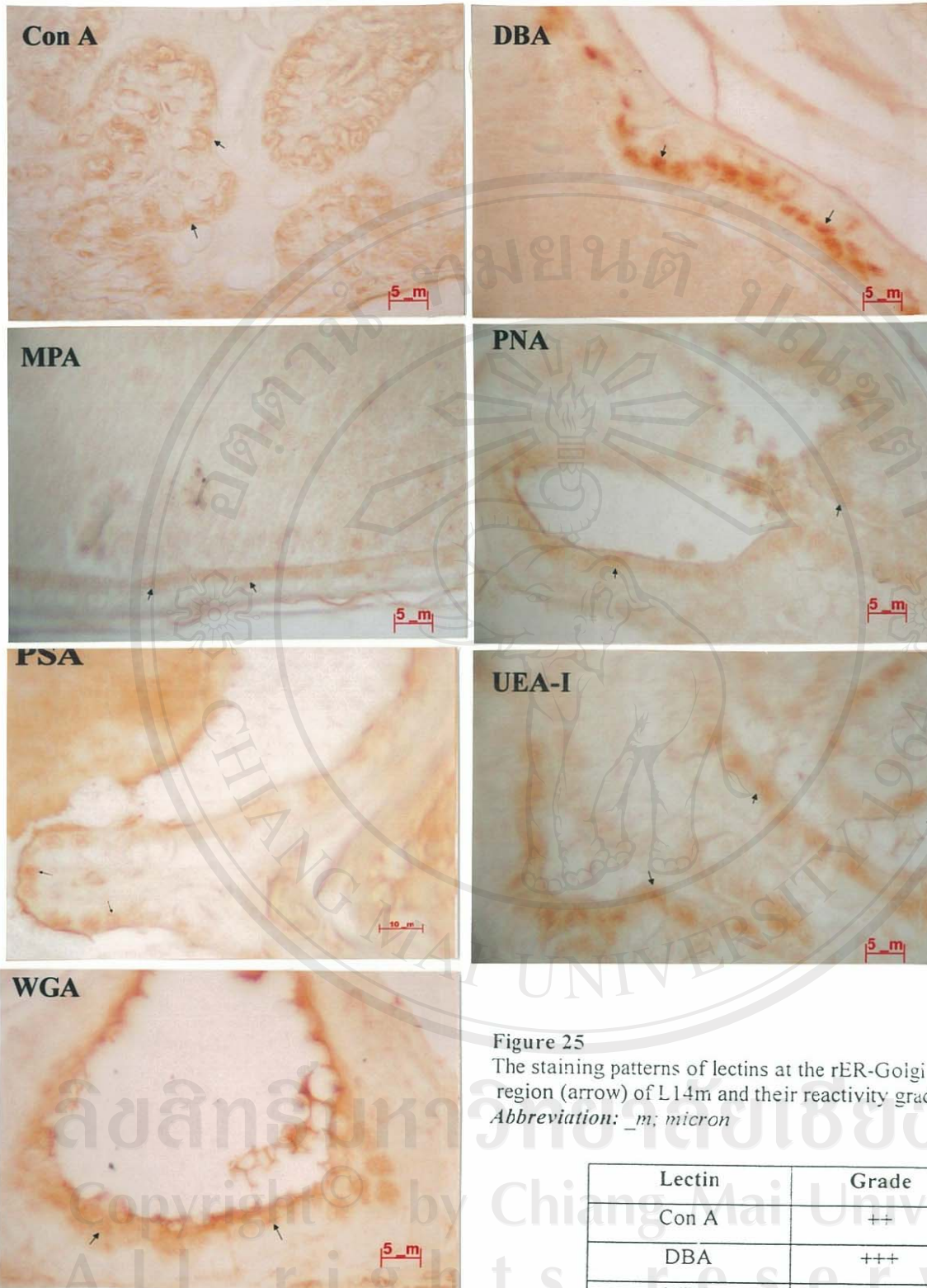


Figure 25
The staining patterns of lectins at the rER-Goigi region (arrow) of L14m and their reactivity grades.
Abbreviation: μ m; micron

Lectin	Grade
Con A	++
DBA	+++
MPA	++
PNA	++
PSA	++
UEA-I	++
WGA	+++

Anterior prostate lobe (coagulating gland)

In one month-old rats (A1m), the UEA-I, WGA, and Con-A revealed moderately stained secretory epithelial cells; these region were weakly stained by DBA and PSA, and very weakly stained by MPA and PNA (Fig. 27). In three month-old rats (A3m), the secretory epithelial cells showed weakly stained with PNA, PSA, and UEA-I, and very weakly stained with Con-A, DBA, MPA, and WGA (Fig. 28). In fourteen month-old rats (A14m), the secretory epithelial cells were moderately stained with UEA-I and WGA, weakly stained with PNA, PSA, and Con-A, and very weakly stained with DBA and MPA (Fig. 29).

Table 5 A comparison of the lectin staining intensity in secretory epithelial cells of prostatic acini in the anterior prostate lobe among age groups.

Lectin Ages	Con-A	DBA	MPA	PNA	PSA	UEA-I	WGA
1 month	++	+	±	±	+	++	++
3 months	±	±	±	+	+	+	±
14 months	+	±	±	+	+	++	++

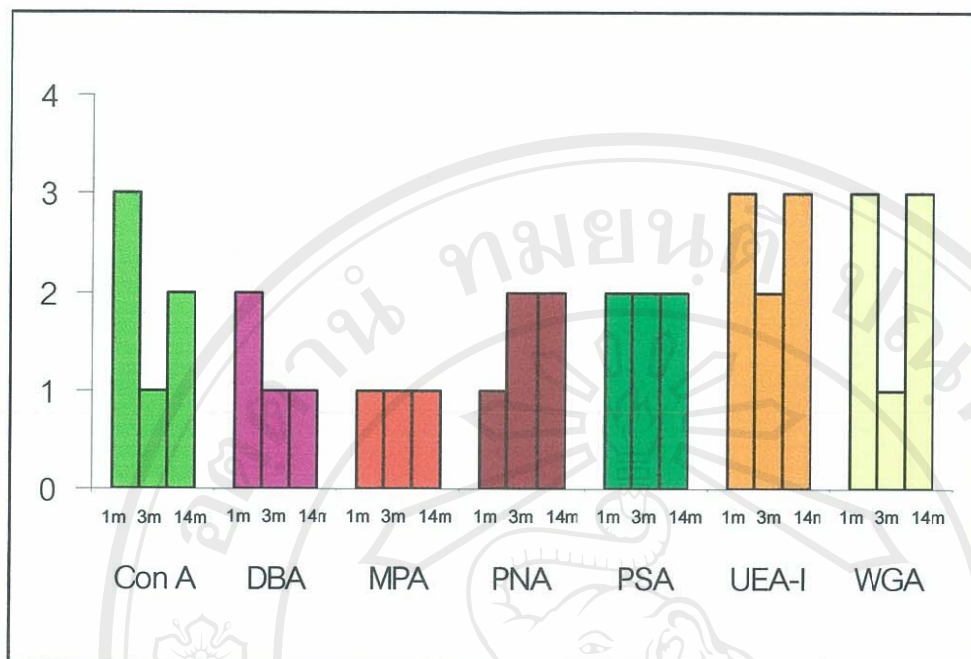


Figure 26 Histogram showing the patterns of the lectin staining intensity in the anterior prostate glands among age groups.

- Con A
- DBA
- MPA
- PNA
- PSA
- UEA-I
- WGA

1 (+) Very weak staining

2 (+) Weak staining

3 (++) Moderate staining

4 (+++) Strong staining

1m 1 month-old rat

3m 3 months-old rat

14m 14 months-old rat

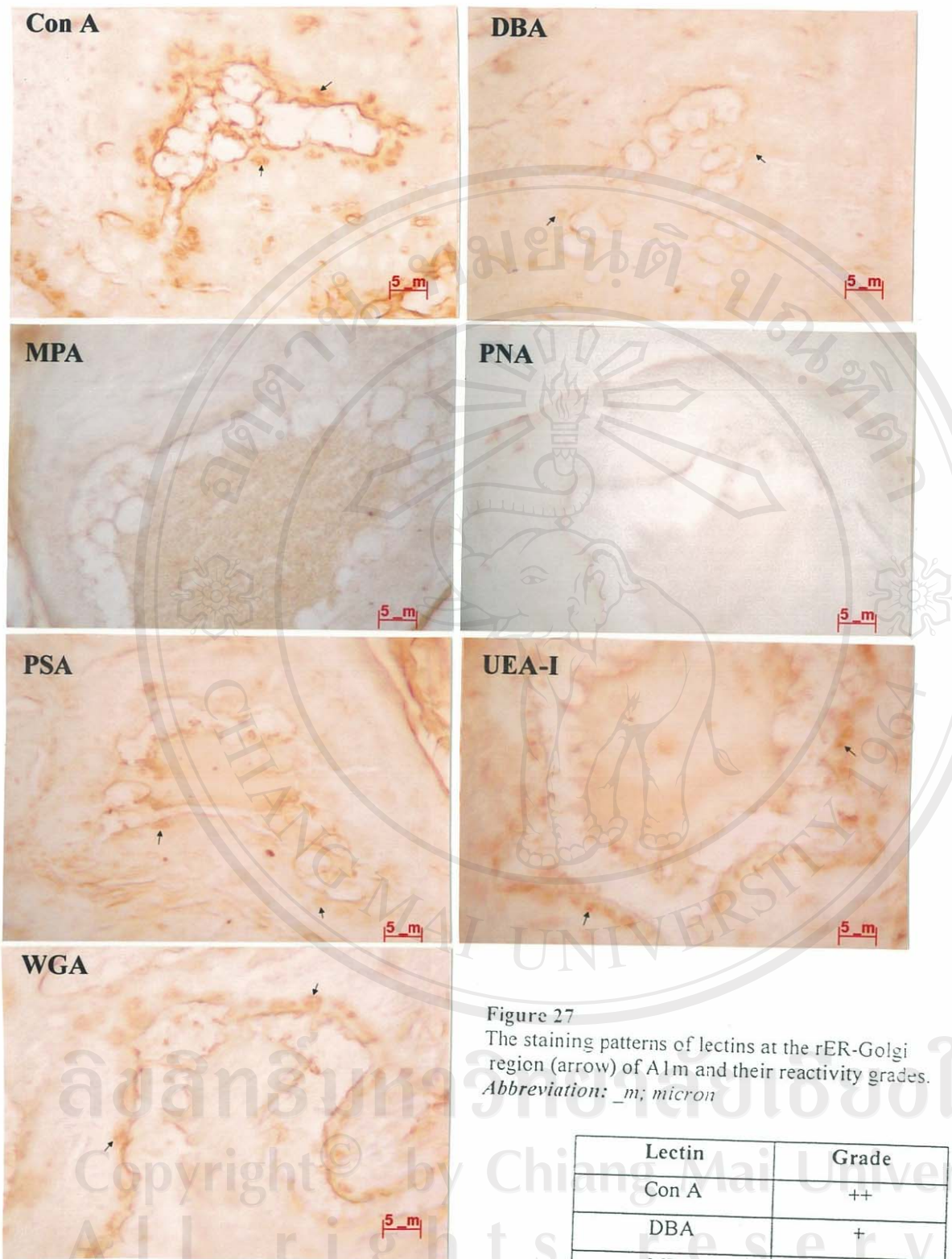


Figure 27
 The staining patterns of lectins at the rER-Golgi region (arrow) of A1m and their reactivity grades.
 Abbreviation: μ m; micron

Lectin	Grade
Con A	++
DBA	+
MPA	±
PNA	±
PSA	+
UEA-I	++
WGA	++

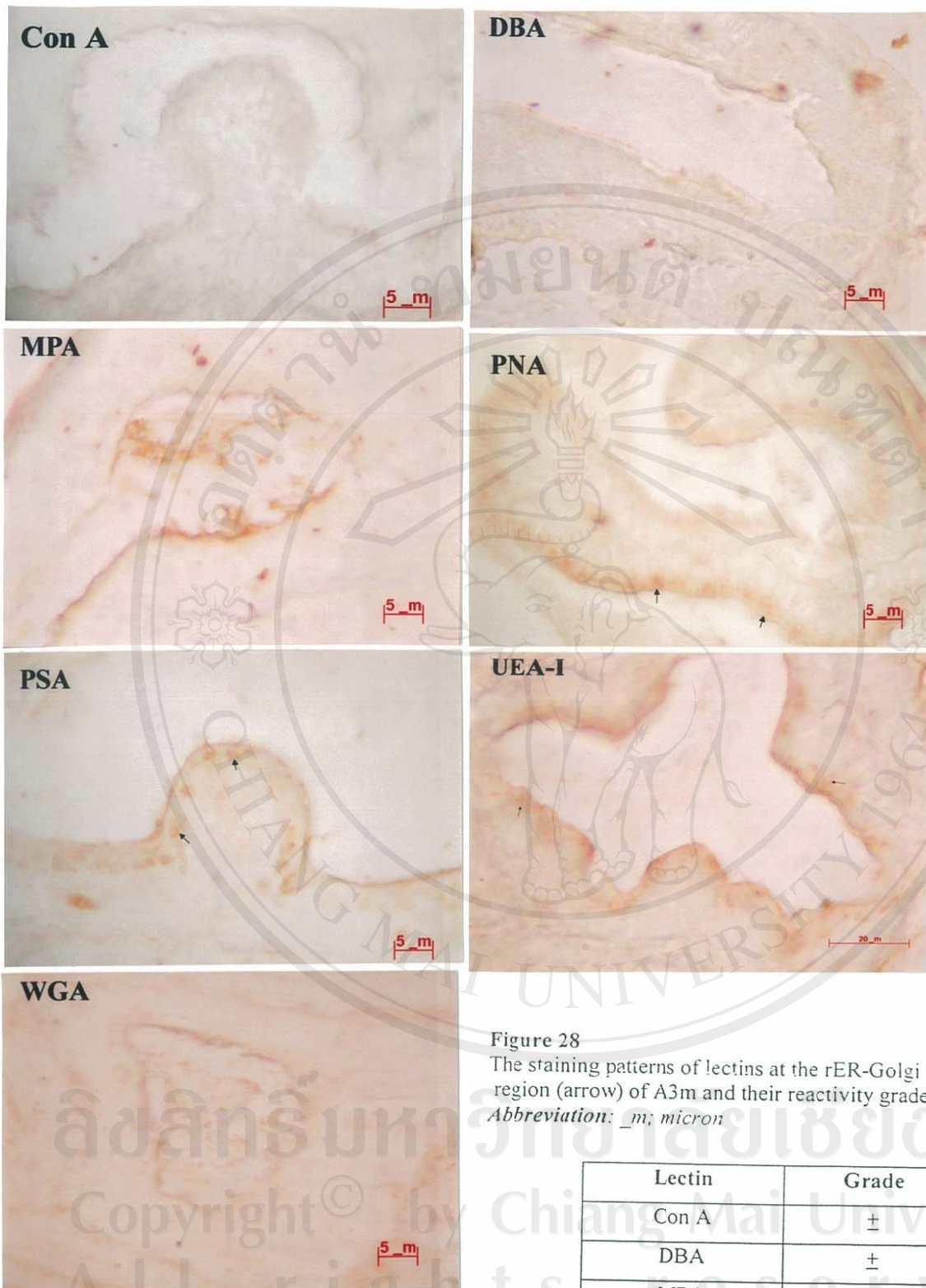


Figure 28

The staining patterns of lectins at the rER-Golgi region (arrow) of A3m and their reactivity grades.

Abbreviation: μ m; micron

Lectin	Grade
Con A	\pm
DBA	\pm
MPA	\pm
PNA	+
PSA	+
UEA-I	+
WGA	\pm

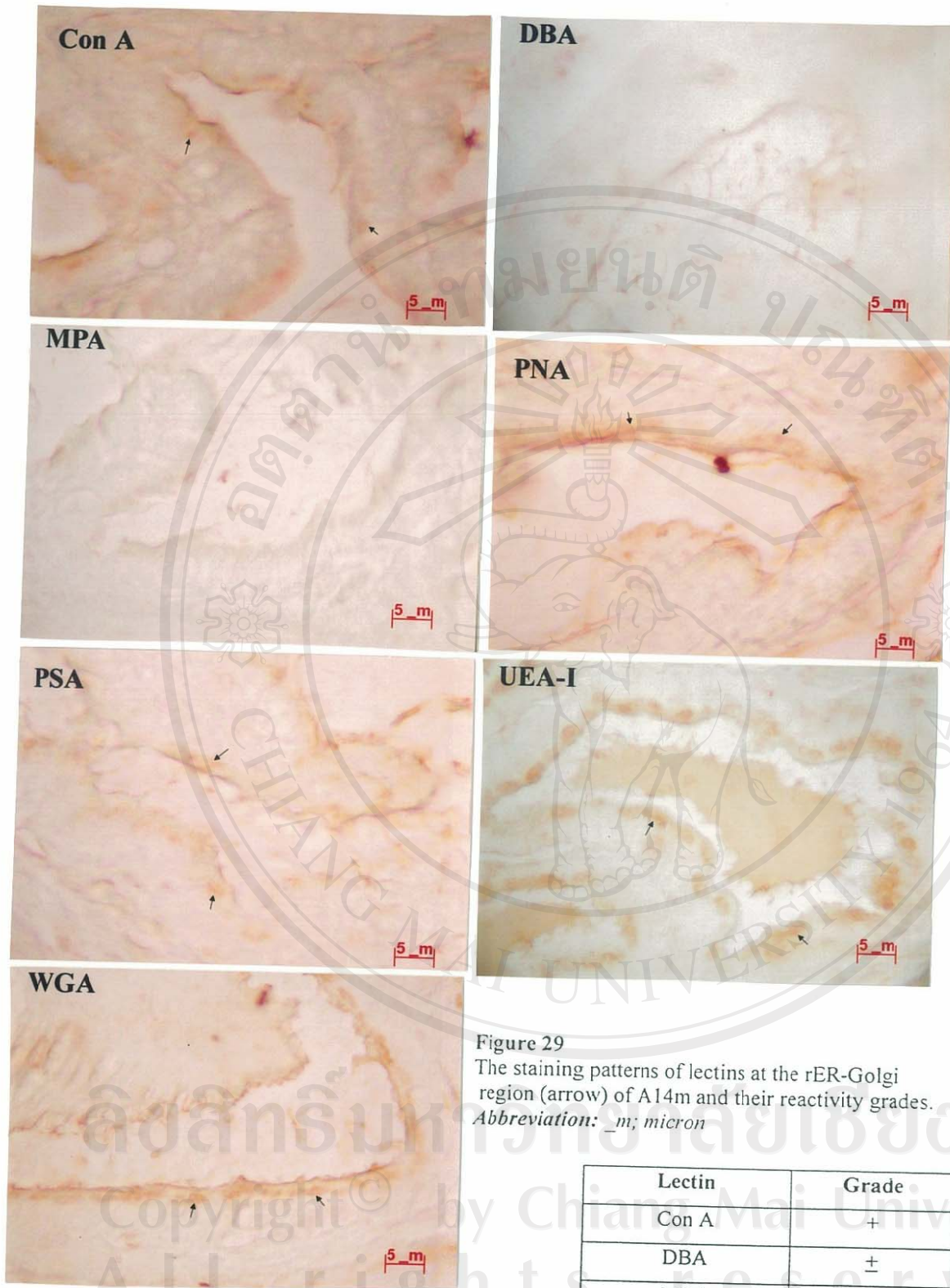


Figure 29
 The staining patterns of lectins at the rER-Golgi region (arrow) of A14m and their reactivity grades.
 Abbreviation: *m*; micron

Lectin	Grade
Con A	+
DBA	±
MPA	±
PNA	+
PSA	+
UEA-I	++
WGA	++